

AMERICAN VETERINARY REVIEW.

AUGUST, 1897.

EDITORIAL.

AMPUTATION OF THE HORSE'S TAIL FOR FASHION'S SAKE.

We are informed by a paragraph going the rounds of the sporting and agricultural press that the Lancashire (England) Veterinary Medical Association has passed a resolution giving it as the sense of that organization that the docking of horses is a necessary operation. Taking that resolution literally, and for the meaning that its frequent quotation is intended to convey, we can arrive at no other conclusion than that the members present at the meeting at which the resolution was adopted were of the opinion that the removal of a healthy horse's healthy tail is a necessity. Not having read the discussion which led intelligent, scientific veterinarians to record their votes in favor of such an absurd and inhumane resolution, we are loth to indulge in harsh criticism of our fellow-veterinarians; but we are very anxious, for the good name of our beloved profession, that the association which is thus apparently maligned shall start a counter-paragraph that shall more vigorously and emphatically deny the truth or authenticity of the allegations than it has been promulgated through the press. It does not affect the question one iota to explain the resolution as meaning that the demands of the public are so strenuous that they are irresistible and are such as virtually to compel a veterinarian to perform this operation, because it strikes an owner's fancy to have his horse's graceful caudal appendage abbreviated. Nor for the reason that men outside of the profession so successfully execute

the amputation as to make it a question of the veterinarian's losing the glittering gold that flows from such practices. These considerations do not justify an association of scientific gentlemen in making an official declaration that a practice that is acknowledged by all men—professional and lay—to be brutal, is "a necessary operation." He who has sworn to the Oath of Hippocrates, to be merciful and just and considerate to the dumb creatures over whose health and happiness he is to minister and encourage, could not conscientiously vote in favor of such an unreasonable proposition. Probably no veterinarian with experience would claim that the simple processes of amputation, cauterization, and cicatrization are fraught with such a magnitude of suffering, nor that the complications are so frequent, nor the sequellæ so serious, as to place it beyond the pale of professional procedure; but the consequences are of a different kind; they entail suffering by reason of the absence of the horse's natural defense against torturing insects. As long as the horse remains sound and satisfactory, his sufferings may not be great, for his master will probably provide him with a fly-net when at labor and a sheet when at rest and in the stable. But when, from disability or other cause, he is no longer his owner's pride, becoming the subject of barter, finding his way into the second-hand dealer's stable and finally into the shafts of the fish-peddler's wagon, he may then yearn for the release that death brings, as did the hero of the late lamented Prof. Walley's pathetic poem, "The Horse's Troublous Life." It is not necessary here to depict his agonizing efforts to defend himself against the pests that Nature intended his beautiful tail should shield him from; they are too well known to us. That resolution, if it exists in reality, is a blot upon the name of the profession of veterinary medicine, and should be expunged as quickly and as vigorously as possible.

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Since the foregoing was in type, we have received the English professional periodicals, in which are printed in full the proceedings of the special meeting of the Lancashire Associa-

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tion, at which the resolution referred to was *unanimously* adopted, about twenty members being present, and nothing is left for the imagination; the arguments in favor of it—weak as they are—are there given. We can only say that such a resolution would never receive the endorsement of an American association, and we do not believe that any other body of veterinarians will follow the miserable example set by the Lancashiremen.

THE REVIVAL OF THE HORSE INDUSTRY.

A careful perusal of the journals representing the horse-breeding interests of the United States reveals some highly interesting news in regard to the changes that are quietly taking place in the breeding and marketing of the horse. The ruthless killing of the western ranch horses, which have become worthless on account of lack of size, strength and docility, and the impossibility of selling light buggy-horses of questionable trotting stock are gradually impressing the horse-breeders that the marketable horse of the future must be an animal of quality as regards conformation, color and training. There has arisen a sudden demand for stallions and mares of the different coach breeds, especially for hackneys, French-coachers and German-coachers, and those breeders who have been saving their stock through the period of depression are selling at long prices. A peculiarity of the horse market during the season just closed has been the unprecedented sale of thoroughbreds, large numbers of them having been purchased for export trade to England, France and Germany. We give below a few extracts from the last number issued of the *Horseman*, which are quite interesting:

PASSING OF THE OREGON HORSE.—The large abattoir constructed at Portland, Oregon, a few years ago for the purpose of converting the numberless range horses of the Pacific northwest into meat, glue, fertilizers, etc., has been closed down for several months, and in spite of the fact that many thousand horses were secured at about \$2 per head, the scheme is reported to have been a losing one for the projectors. It had one good effect, though, for in the few months it was in operation it reduced the cayuse horse supply to the extent of about 12,000 head. When

this enterprise was started the owners of the vast herds of semi-wild horses which roamed the Oregon plains hailed it as a sort of a "last ditch" proposition, and now that even this opportunity for ridding themselves of the animals has vanished, they know not which way to turn, and the horses have become so worthless that they can be purchased in any number wanted at from 50 cents to \$2 per head, and they are regarded in much the same light as wild animals which deprive valuable sheep and cattle of rich grazing needed by them. However, crowding him off the good grazing grounds of the earth and making him a target for the rifles of the sheep herder and the cowboy, and like his fellow nomad, the American Indian, the diseases of civilization are also helping to decimate his ranks. Last fall the Deputy State Stock Inspector in Umatilla County killed several hundred horses affected with mange, on the Umatilla Indian reservation. It was thought that the disease was pretty well stamped out, but within the past few weeks a large number of afflicted horses have come down from the mountains and the disease is again spreading on the reservation, necessitating another wholesale killing.

WANTED—LARGE NUMBERS OF DRAFT-HORSES.—A dealer in Maine advertises that he has contracted for the purchase of one thousand head of sound, good, useful western workers, and will import them into that State at the rate of four carloads each week, two loads each Tuesday and two loads each Friday. He says that he will also have on sale at all times during the season one hundred head of big, strong horses for the lumber and heavy hauling trades. This is a most interesting announcement. Here is just one of many dealers in horses doing business in Maine. He must go westward, as far as Buffalo, at least, and buy 1000 head of western horses in order to supply the demands of the farmers and other horse users in the territory in which he operates. Have the Maine breeders not been raising any horses lately, or what is the matter? If only a few horses were needed in the Pine Tree State it would not be so curious, but when it comes to the dealers having to buy their stock 1000 at a time it looks as though the promised horse famine is closer at hand than was expected some time ago.

SALES OF THOROUGHBRED YEARLINGS.—This year men seem to be willing to pay more for thoroughbred yearlings than they have been for seasons past. The Rancho del Paso colts and fillies sold very well, the get of the English horse Goldfinch selling to the best advantage. Mr. Daly invariably pays the biggest prices going at the Haggin sales of yearlings. When thoroughbred yearlings sell for eight thousand dollars, five thousand dollars and so on, it means that times have changed. The full brother to Ornament brought over ten thousand

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dollars, the full brother to Henry of Navarre brought over twenty-five hundred dollars, and altogether the sales have, as a rule, been most satisfactory. Even at Sheffield, Ind., the five sons of the mighty Kingston brought an average of over nine hundred dollars each, M. F. Dwyer having a commissioner on the ground to buy the sons of the great horse. At St. Louis the prices obtained were also good.

THOROUGHBREDS FOR FRANCE.—Within the past few weeks an agent of the French government has purchased at and around the Forsyth track some fifty-five thoroughbreds, the price paid being, on an average, one hundred and twenty-five dollars per head. As far as can be learned the horses are being purchased for use in the French cavalry and artillery service, not for breeding purposes, and thereby hangs somewhat of a mystery. Hitherto it has been supposed that for active military service the thoroughbred lacked weight-carrying ability, and that the half-bred horses were superior in this respect. It has all along been conceded that some thoroughblood was absolutely necessary in an army horse of high class, and in truth thoroughbreds are used in all the old world nations for begetting cavalry and artillery horses, but it must be an extraordinary condition that prompts the French government to dispatch to America an emissary with an order for some two thousand thoroughbreds valued at only one hundred and twenty-five dollars. Thoroughbreds that can be bought for that price are not as a rule worth much for racing purposes, so it is no wonder that the quest of the French commissioner has given rise to much curiosity.

In regard to this last item we may remark that there is nothing mysterious about it. The light cavalry of the French, German and other Continental armies have mounted a large number of their officers on thoroughbreds, because for reconnoitering purposes they surpass any other horse in swiftness. As long as sound thoroughbreds can be purchased from us at such a low figure, these horses will be readily purchased from abroad for these purposes, although, we believe, that all the mares will go to the studs.

These reports, together with the call for cavalry horses from Belgium, and the exportation of thoroughbreds and half-breeds for the Japan army from Seattle, Washington, may justly give the American horse-breeder a pointer not to exclusively engage in the business of breeding heavy coaches and roadsters, but that he may with profit pay special attention to the breeding of a

well-shaped, middle-priced saddle-horse, for which there is such a great demand from the armies the world over. Yet, as we have no stallions nor mares of an established army type and as we have an abundance of coach-types, we should import some of them, selected by expert veterinarians, to have a nucleus to start from in the breeding of these horses.

ARE THE APPOINTMENTS OF QUACKS INFECTIOUS?

When the Governor of Illinois so far disregarded the demands of the legitimate veterinary profession of that State as to appoint to the high office of State Veterinarian a man deficient in every qualification to fill the position—a man without scientific training and education and avowedly opposed to higher education—notwithstanding the fact that he had been made conversant with these points, it was supposed that the acme of political contempt for the public welfare and common decency had been reached, and that the righteous indignation manifested by the profession of that State and elsewhere would be a sufficient safeguard against the repetition of such an atrocious occurrence for some time at least. The REVIEW denounced the monstrous outrage in unmeasured terms, and spurred on the veterinarians of Illinois to rebuke the high-handed action of the politicians by every means in their power. In the very next issue (July) we were again called upon to chronicle the appointment by the local Board of Health of Nashville, Tenn., of a non-graduate to the office of Meat Inspector of that city, notwithstanding that his two competitors for the position were graduates in veterinary medicine. Now, for the third consecutive issue of the REVIEW, we record a similar act in the State of Michigan, where so eminent a member of our profession as Prof. E. A. A. Grange, a man who has been long tried, and who is regarded by his fellow-veterinarians throughout the country as an earnest, brilliant and distinguished scientist, has been displaced in the important and responsible post of State Veterinarian to make room for a non-graduate.

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What is the cause of this infectious outbreak of political quackery? Is it due to lack of organization among veterinarians? Is it that the graduated veterinarian is not enough of a politician? Or what is the matter?

And what is the remedy?

The answer to the last interrogation is more easily given than the preceding ones. The profession in States where professional offices are filled by political preferment must strike at the root of the evil. It will do no good to wage perpetual war against the appointive power for doing an act which the law permits him to do. As scientific men, as dignified professional gentlemen, we cannot afford to enter a scramble for such positions with political heelers, who are making capital out of the very prominence which our protests are bringing them. It is a blot upon our form of government that such offices are the subject of reward for ante-election services, and the remedy lies in their elimination from that category.

The law is at fault: the veterinarians must have it changed. Place all such positions in the competitive list, where none are eligible except those holding diplomas from recognized veterinary colleges or universities. Do our scrambling before the legislative committees, unitedly, determinedly, relentlessly, and the righteousness of the cause will be irresistible.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

Nothing, it would seem, is now lacking to make the thirty-fourth annual meeting of the National Association a record-breaker in interest, profit, attendance and social pleasure. If there is a disposition to doubt this statement, a reference to the news columns of this issue of the REVIEW should be sufficient to dispel such fears, for certainly the intellectual programme is full to overflowing with subjects that appeal to every phase of our profession; the outline of the arrangements made by the local committee for the social delectation of the guests is sufficient to make one yearn for the rapid approach of the days when

they may be embraced, while the transportation companies have made the cost of the trip from all points at the minimum, largely due to the low rates existing to the great exposition now in progress in the convention city. We have been exhorting our brethren for the past two or three months to "Get ready for Nashville," and, sounding the same call again, we feel sure that those who can avail themselves of the opportunity to learn much, see much, and enjoy much, will never regret the time taken for the duty and the diversion.

STATE BOARDS OF VETERINARY EXAMINERS.

In all probability there will be present at the thirty-fourth annual meeting of the United States Veterinary Medical Association, which convenes in Nashville, Tenn., September 7th, 8th, and 9th, one or more representatives of every veterinary medical examining board in the United States. During the session of the association there will occur the fourth annual meeting of the Association of Veterinary Faculties of North America. At the last meeting of the latter organization earnest discussion of the subject of reciprocity between the various State boards of examiners was indulged in, resulting in the appointment of a committee to further such ends. Since then the REVIEW (the editors of which constitute one of the committee) has agitated the matter in two of its issues, and has done what it could to keep the question alive before the profession. It now offers this suggestion to the Association of Faculties: Would it not be well, and in furtherance of the desired object, to invite all representatives of such boards to attend the meeting of the Faculties during the discussion of the subject of uniformity and recognition between the boards of the different states, so that views might be intermingled and something tangible and practical arrived at, whereby reciprocity could be secured in reality as well as in theory?

If forced to remain away from Nashville, you will find a full account of the meeting in the October REVIEW.

ORIGINAL ARTICLES.

[WRITTEN SPECIALLY FOR THE AMERICAN VETERINARY REVIEW.]

INFECTIOUS ABORTION OF MARES.By W. L. WILLIAMS, V. S., PROFESSOR OF SURGERY, ETC., AT N. Y. STATE VETERINARY COLLEGE, ITHACA, N. Y.

Infectious abortion as a distinct, specific malady has long been recognized among domesticated animals, and, distinguished from general transmissible diseases which in the course of their attack may induce abortion of the pregnant females, as seen in hog cholera affecting pregnant sows, or the so-called "pink-eye" or epizootic (infectious) cellulitis of mares; as well as the sometimes wholesale abortions reported from ergotized or other deleterious foods.

A brief *résumé* of the literature upon the subject, as relating to the affection in mares, is given in connection with the records of some experimental work conducted by us, in the sixth and seventh annual reports of the Bureau of Animal Industry, Department of Agriculture, p. 449.

It is desired here to briefly record some observations made upon the control of the disease when once existing in a herd of pregnant mares. These observations were made in a herd of standard trotting and thoroughbred mares, the property of Mr. H., Bozeman, Mont.

In all, Mr. H. had, in November, 1895, twenty-five mares presumably pregnant. None of them worked except one grade draft mare, and all having apparently faultless care as to freedom, housing, feed and water. The first animal to abort was the grade draft mare used for general farm work, the abortion occurring in November, 1895, followed by somewhat widely separated abortions of three trotting mares, which led to our being consulted early in 1896, after which a close watch was kept, and on February 7th we were called to attend a young trotting mare which had apparently been in labor for some twelve to eighteen hours; the foetal membranes, considerably decomposed and

discolored, were hanging from the vulva. The foetus was found in a false position, which was readily corrected and the mare easily delivered. The foetus was hairless, apparently of about eight months gestation. The afterbirth was removed, the uterus irrigated with carbolized water, and the patient comfortably housed. She apparently was doing well, ate moderately, and seemed safely on the road to recovery, until on the morning of the 9th she was found dead in her stall. Autopsy revealed all organs except the generative apparently healthy. The uterus was enlarged, swollen and contained a large amount of a dirty, foetid, watery excretion, while in the os and vagina were large masses of tough, foetid, dirty, yellowish, croupous exudate.

During the ineffectual labor of the patient she was in company with some fifteen other pregnant mares. These were promptly removed to new quarters, and each mare received a vaginal injection of a solution of corrosive sublimate, 1-1000, to be followed daily with a sponging of the vulva, tail and surrounding parts with the same solution.

During the nights of February 26, 27 and 28 each, a mare aborted without having presented any signs of approaching trouble when left for the night, and the first intimation of the loss was the finding of the dead foetuses in the stalls on the following mornings, the mares in each case being apparently well. The aborted mares were promptly removed to other premises, the foetuses and membranes safely disposed of, the bedding cleared away and burned, the stalls fumigated by burning sulphur, and closed against other animals, and the spongings of the vulva and tail of the remaining pregnant mares renewed and carried out twice daily.

A few days later another mare, not known to have been in contact with those which had aborted, required aid in expelling a dead foetus, and although carefully watched, developed severe metritis after forty-eight hours, which yielded to treatment.

The abortions ceased at this point, and in the course of a few weeks healthy foals were dropped as the remaining pregnant mares completed their periods of gestation.

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The history of the outbreak, coupled with the symptoms, served to quite fully confirm the suspicion of infectious abortion.

The results of the antiseptic treatment point strongly to the belief held by most observers that the disease is essentially one of the foetal membranes and foetus, gaining access to these through the vulva and vagina, and serve to confirm results of a similar treatment carried out by several investigators in infectious abortions of cows and ewes. Although several mares aborted after the treatment had been applied, it is quite safe to assume that the infecting agent had already gained access to the foetal membranes before the application of the treatment, which could not then be of any possible avail.

The disease having apparently ceased, Mr. H. again bred a part of his mares, and on December 29, 1896, reported that he had ten healthy foals of the previous spring, and that all mares bred seemed safely in foal, no abortions having occurred so far as discovered since those above recorded.

The origin of the affection in the herd of Mr. H. could not be clearly traced, but the malady seemed to be prevalent to some degree among mares on neighboring farms.

Mr. H. had on his premises also several mares which had come from the herd of Mr. D., where the disease had raged to such an extent, in the summer of 1891, that practically all mares aborted.

In view of the success recorded by various observers with the plan of treatment here outlined and the confirmatory observations in this outbreak, it appears that when the disease exists among animals of sufficient value, its control and eradication may be undertaken with reasonable hope of success.

THE VETERINARY JOURNAL (England) for July has a 32-page article by James Hunter, F. R. C. S., F. R. S. E., on "Sporadic Pneumonia in Cattle," it being called forth by Dr. Theobald Smith's contribution to the recently issued report of the Bureau of Animal Industry.

ACUTE LAMINITIS.

BY B. L. CLARK, M. D. C., MONTICELLO, WIS.

A Paper read before the Wisconsin Association of Veterinary Graduates.

The subject which I have chosen is that of acute laminitis, or inflammation of the sensitive laminæ of the foot. I do not expect to present anything new, owing to the fact that this disease has been so thoroughly investigated and discussed in our works on veterinary pathology; but simply to refresh the subject in your minds. This disease is quite common among horses, and is frequently seen in cattle. It is the most dreaded disease to which the horse is liable. It is not confined to the feet alone, although its chief seat is there. It has a variety of causes, as over-exertion, errors in feeding, drinking cold water when heated, standing in a constrained position for a long time, a sudden chill, or indigestion. The last cause, in my opinion, is the most common. It frequently arises from other diseases, or, rather, is a complication of such diseases as pneumonia, enteritis, or bronchitis, where the whole surface of the body is affected, as seen in cases where the hair of the mane and tail falls out. The tendency of this disease is to throw off the hoof, as indicated by the rings on the external surface of the hoof wall. It occasionally arises from over-exertion and concussion, exemplified in cases where horses are run against time, but it is much more frequent where the mucous membrane is affected. In cases of concussion the pedal bone is involved, and results in osteitis, and sometimes necrosis and sloughing of the hoof, terminating in an agonizing death. The symptoms of both forms are almost identical.

Pathology.—Inflammation of the sensitive foot includes the laminæ, sole and os pedis, resulting in an exudation, which is greatest at the toe, the tissues being more vascular at that part. The pain is most agonizing and persistent, owing to the fact that the foot is enclosed in an unyielding horny box, the blood-vessels being engorged and having no chance to swell or expand. Pressure upon the anterior part of the pedal bone has a tendency to force it downward, and separate it from the wall.

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As a result of the inflammation there is an exudation thrown out at this point, which is of a dirty reddish color; this fills the canals and lacunæ of the pedal bone, forming a barrier to the circulation of the blood, thus hastening the process of necrosis and decay. Should the inflammation persist, the exudation accumulates at the toe, separating the horny and the sensitive laminæ. As a result of this the anterior part of the os pedis is forced downward, producing a convex condition of the sole, while the secreting power of the sole is arrested or prevented, and the horny sole becomes weak and spongy, affording very little protection to the sensitive parts within. The outer horn of the wall, or that secreted by the coronary band, now presents a ribbed appearance, as if attempts had been made to cast off the hoof. These rings are irregular and run together at the anterior part of the hoof. Prof. Williams says that occasionally we have suppuration at the coronet and sometimes at the sole, detaching the sensitive from the horny sole.

Laminitis produced by concussion is usually confined to the front feet. Many writers state that affections of serous membranes, such as the pleura, frequently terminate by metastasis in laminitis. But I am of the opinion that when the sensitive laminæ become involved during the progress of some other disease, it is always the mucous membrane that is affected, owing to the fact, above mentioned, that as the skin is continuous with the mucous membrane, it is also involved, and in this way extends to the feet. The skin being affected is somewhat congested and will naturally involve all of its appendages.

The circulation of the feet being restricted within an unyielding space, the walls being unable to expand, it produces the intense pains by the engorged blood vessels pressing upon the nerves. We also have a fair example of their relation in cutaneous eruptions from indigestion, catarrh, etc. The irritation may be very slight, scarcely observable, but the irritation of the folds of the sensitive laminæ in the foot surrounded by its unyielding case causes the acute symptoms.

Acute laminitis may terminate in resolution of the parts,

suppuration, gangrene and sub-acute or chronic laminitis. The chronic form of the disease is seen when the acute has partly subsided and the symptoms somewhat abated. Horses suffering with chronic laminitis are predisposed to the acute form. The pathological changes of the chronic are the descent of the os pedis, thus causing a convex, weak sole, and a great horny growth at the toe.

Causes.—Indigestion, concussion, bad-shoeing, hereditary tendency, and defective conformation. It is said by some that horses with wide feet are more liable to the disease, but it is the general opinion that horses with moderately small feet, and weighing about twelve to thirteen hundred pounds are most often affected. The exciting causes are : over-exertion, concussion, and indigestion when caused by engorged stomach. The disease is generally confined to the front feet, especially when caused by concussion. But when caused by indigestion it may affect the hind feet only, or all four of the feet.

Symptoms.—The horse is exceptionally lame and almost immovable ; especially at starting, the whole body seems to be cramped. He stands with hind feet well under the body, and front ones advanced to relieve them from the weight as much as possible. If all four feet are affected he will put them nearly together, sway backwards and forwards, and from side to side in order to get the weight on the heels as much as possible, the toes being elevated from the ground. If compelled to move he elevates his feet with difficulty ; he will often groan with pain and sweat freely in patches, while the remainder of the surface of the skin will be hot and dry. Temperature from 102° to 105° F., pulse full, hard and increased in frequency, the general symptoms are those of agonizing pain. Appetite is somewhat impaired and thirst generally increased. They generally maintain the standing position, but when they do lie down they often remain for some time and seem to be relieved. Cases of suppuration and gangrene are not very frequent owing to the anatomical structure of the veins of the foot. The feet will be found to be hot to the touch, and when tapped with the hammer the

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animal will show signs of pain. The pulse at the digital artery will be found full and throbbing. The respirations accelerated, the mouth hot and dry, the fæces dry and coated, urine scanty and high colored. The symptoms vary with the feet that are affected. When the front feet are affected, which is most frequently the case, they are advanced forward and the hind feet are carried well under the body to relieve them of their load. But when the hind feet only are involved the animal will often lie down. It may be most marked on one foot, but this is generally due to some local lesion.

In the ox it is more serious in the inner claw on account of it bearing the most weight. He walks with difficulty, and takes advantage of every opportunity to lie down. The fever is severe, and sometimes there is loss of appetite and rumination.

Termination of the Acute Form.—Well treated laminitis is of short duration, and terminates in a short time in resolution. If it runs for a longer period than eight to twelve days, chronic laminitis will probably result. Resolution in the acute form is accomplished when the inflammation is quickly subdued and the products are absorbed; when thus ending the horn secreting structures of the foot is not often altered.

Complications and Terminations.—Hæmorrhage, inflammation with exudation, suppuration, gangrene, and lastly chronic laminitis. Hæmorrhage is that condition when rupture of the capillaries have taken place, thereby infiltrating between the two laminæ and sometimes oozing out at the coronet. If oozing has taken place it is advisable to cut in at the toe, at the junction of the wall and sole, thus relieving the pressure. Inflammation is the result of congestion if not relieved, and as a natural consequence we have exudation. This exudation being thrown out from the sensitive lamina, separating the sensitive from the horny, thus pushing the pedal bone downward, and the wall upward, thereby forming a condition known as chronic laminitis. Suppuration is more rare, and is only seen in the traumatic form. It generally attacks the sensitive sole, and occasionally works its way to the coronet. This is a very painful complica-

tion. Relief may be obtained by making an opening at the toe, but sloughing and dropping off of the entire hoof is occasionally seen. Gangrene of the sub-horny tissue sometimes takes place, though seldom under the influence of excessive pressure, especially when there is a sub-horny exudation. When this sets in the violent pains suddenly cease, resting is more solid, and he moves without difficulty; but at the same time the countenance is anxious and contracted, the pulse becomes small and difficult to count, the temperature diminishes, and the animal has an unsteady gait, is indifferent to excitement, and soon he dies from septic infection. Chronic laminitis is that condition of the foot when resolution has not taken place in ten to fifteen days.

Treatment.—Give a mild purgative (aloes, I think, is best); follow with febrifuges; aconite (the tincture or fluid extract), if the fever is high, may be given every two hours. Also give potassium nitrate, as it seems to produce good results in this disease. Remove the shoes and stand the horse with affected feet in hot water as deep as the pastern joint, and let him remain there for thirty to forty minutes. Then remove and apply hot soft linseed meal poultices. Repeat the bathing two or three times a day, and each time apply a fresh poultice. At the end of about the third day cease the bathing, and change the poultices every twelve hours, until relief has been afforded. At about the third or fourth day I think it advisable to give a laxative. Would also advise walking exercise, twenty to thirty minutes three or four times per day. At the onset of the disease the horse should be placed in a loose box-stall, well ventilated, and bedded deeply with short straw or sawdust. If the weather is cold clothe him warmly. If the appetite is not lost, give soft, easily digested food. After the effects of the disease have passed off, he may be shod with a wide-web shoe, and the external wall and sole of the hoof should be painted three or four times per week with some kind of hoof ointment. During this time he may be put to moderate work, or better still, if in summer time, turn on wet low pasture for several months, which will soften and stimulate the growth of the hoof.

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ANAESTHESIA.

BY F. TORRANCE, D. V. S., WINNIPEG, MANITOBA.

A Paper read before the Manitoba Veterinary Association, Feb. 16, 1897.

Last year the city of Boston celebrated the jubilee of the discovery of anæsthesia. Fifty years ago a dentist of Boston, named Morton, discovered that the inhalation of ether produced insensibility to pain, and the first surgical operation under ether took place in the Massachusetts General Hospital on October 16, 1846. A year later, Dr. James Simpson, then Prof. of Midwifery at Edinborough, gave to the world the priceless boon of chloroform, and for many years had to wage an unceasing war against ignorance, prejudice, and even religious bigotry, before the world accepted the gift at its true value. It is hard for us to realize at the present day the storm of opposition that arose in many quarters against the introduction of chloroform. Even in the medical profession it was not received with open arms by any means. "Surgeons probably were inclined to look askance at a thing which came to them from an obstetrician. Moreover, it was a prevalent belief among them that the pain of an operation was a useful stimulant to the patient. On this ground the chief of the army medical staff recommended the surgeons during the Crimean war not to use chloroform. Fanatical clergymen denounced its use in labor as an impious attempt to evade the curse pronounced by the Almighty on Eve and all her daughters. Simpson fought these men with their own weapons, pointing out that the first operation under an anæsthetic had been performed by God himself, when he cast Adam into a deep sleep before removing his rib. The fight was an obstinate one, but Simpson was victorious, and chloroform won the place which it has held for many years, as the anæsthetic most widely used."

In the veterinary, as well as the medical and dental professions, we owe a debt of gratitude to those men, who, taking their lives in their hands, experimented upon themselves with various drugs until their search was rewarded by the discoveries of ether and chloroform, and it is for us to bring our modest tribute to

the memories of Morton and Simpson. Are we as a profession making as much use of anæsthesia as we might, employing it every day to alleviate the sufferings of our patients under the knife or cautery? Every V. S. is familiar with chloroform, ether and cocaine, and understands the methods of administration theoretically, but practically, does he use them every day in his practice? I think not. Too many make no use of anæsthetics unless for the performance of an operation of an exceptional nature. Too many are satisfied to perform even serious operations without any anæsthetic, provided the struggles of the animal can be controlled in any other way, and there are some in the profession whose only anæsthetic is the twitch.

Is this apparent indifference to the sufferings of our patients a proof of our cruelty or hardheartedness? I hope not. We have chosen a profession whose very existence depends upon our ability and willingness to relieve our dumb patients when suffering disease, and to alleviate the pain and repair the damage resulting from injuries. Why, then, should we be indifferent to the pain inflicted by a surgical operation? Is it the cost of the drug, or the time required for its administration? I think not. The real reason, to my mind, lies deeper than this. It is the impression that there is a certain amount of danger in giving chloroform, that it requires a special apparatus for its administration, and lastly, that the patient must first be cast and secured with hobbles or ropes.

These certainly would be serious drawbacks if they were true; but they are more imaginary than real, and are the result of wrong teaching on the part of some who should know better. Fleming, for instance, describes the "Carlisle Inhaler" as necessary for the administration of chloroform. In Hoare's Therapeutics, p. 348, the same idea prevails, and with the opinions of such authorities before him, it is no wonder the general practitioner hesitates to give chloroform without an inhaler. These appliances have certain advantages, such as shortening the stage of excitement, and economizing the drug, but as to being essential in any way it is a great mistake. Chloroform may be ad-

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ministered safely without any special apparatus whatever, and I will give you briefly my experience with anæsthetics, in the hope that the subject will be fully discussed, and prove of benefit to each and all of us.

The subject naturally falls into two divisions—general and local anæsthesia. 1st. General Anæsthesia—Chloroform is the drug generally used for this purpose with the larger animals, as ether is less powerful and more expensive. The cheaper grades of chloroform seem to be equally effective with the best, and I consequently use a cheap grade, costing \$1.00 per pound. The animal to be chloroformed requires no preparation in the way of dieting, as is sometimes advised. The nausea which often accompanies anæsthesia in human beings is not seen in horses and cattle, unless the distaste for food which is sometimes shown for a few hours afterwards is taken as an indication. The animal is preferably cast and secured in the usual way with hobbles, but even this is unnecessary, and I have often chloroformed horses and cattle on their feet. However, if you have the opportunity, it is better to secure the animal on the ground. I now take a good-sized sponge, which is slightly damp, and pour an ounce or two of chloroform upon it. This I apply lightly over one nostril while the other nostril is closed by the other hand. At each inspiration the sponge is lightly applied to the nostril, and at each expiration it is removed. This is to save chloroform, and is not essential. What is necessary is to avoid compressing the sponge with the hand or impeding the free passage of air to the lungs through it. The animal's head must be securely held during this stage, for the first whiff of chloroform is always followed by a violent struggle. Some long breaths follow this, and generally the succeeding struggles are less violent. More chloroform is dropped on the sponge from time to time, and I find it a good plan to cut a groove down the cork of the bottle, from which the chloroform can be sprinkled on the sponge without waste. I do not measure the amount of chloroform given, as I consider, with ordinary care, it is impossible to give an overdose to one of the larger animals. The respiration

is carefully watched. It should be easy and natural. If hurried, shallow breathing comes on, more chloroform should be given, while if it is unduly slow or sighing, more air should be allowed. Oral breathing is quite frequent during administration of chloroform, and not much importance need be attached to it, but it interferes with the proper inhalation, and sometimes it is necessary to stuff a towel in the mouth to prevent it. As soon as the second stage is reached, I hand over the chloroform and the sponge to the assistant. Draw out the tongue, and let it hang out of the side of the mouth. It is a useful guide to an unqualified assistant as to the amount of chloroform to give, as the horse will show by twitching the tongue if consciousness is returning.

By these simple means I have chloroformed a large number of horses, as well as cattle, and have never seen any bad results from it, but have found it of immense value in all severe operations, such as embryotomy in mares and cows, and the surgical treatment of large hernias. In cases of difficult parturition it is extremely useful, as it abolishes straining, and renders the necessary manipulations much easier. Sometimes in difficult cases of this kind I have kept the animal under chloroform for hours without any ill effect, so the danger of an overdose must be very slight.

The effect of the chloroform will continue for some little time after inhalation has ceased, and it is necessary, while the animal is coming to, to have the legs secured, and some one to hold the head. Otherwise the horse may attempt to get up before he is able to stand, and would flounder about, and perhaps hurt himself. The time during which he should be watched is not very long, usually 10 or 15 minutes, and is longer in proportion to the amount of chloroform he has inhaled. Unless there is some special reason, it is better not to force the animal to get up until he is ready, as it is impossible to tell just when he will be able to stand. A good rough guide is the smell of chloroform on his breath. If strong, do not try to get him up, but if faint, he may be got up at once.

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So much for the chloroforming of large animals. As for dogs, I do not as a rule use pure chloroform, as it is dangerous, and requires careful watching. I prefer the A.C.E. mixture, and find it quite satisfactory. The only appliance needed is a towel folded into a cone shape, with a small sponge fastened in the bottom of it. It is a very easy matter to give a dog an overdose of chloroform, and in such a case the quickest way to restore animation is to take the dog by the hind legs and swing him, head downwards, from side to side until he revives.

Local anæsthesia is a more recent discovery than general anæsthesia, and has lately enlarged its sphere of usefulness enormously, owing to the discovery of cocaine. At first the only way of producing local anæsthesia was by freezing the part by ether spray, or to render it numb by the use of ice and salt. At present the injection of cocaine solution is the method chiefly employed, and it is hardly possible to overestimate the value of this drug to the general practitioner. Recently a new method of employing it has been discovered, and promises to be of great usefulness. It is called cataphoresis, and is a process of driving the cocaine into the tissues by means of an electric current. It has already proved of great assistance in dentistry, and will probably be found useful, too, in our profession.

Cocaine is generally injected into the subcutaneous tissue with a hypodermic syringe. This should be kept clean, and not used for exploring pus cavities, or an abscess may form at the seat of puncture. The syringe should be large enough to hold two drachms of fluid, and it is an advantage to have the needle coupled on to the syringe simply by pushing one into the other. This will save many breakages of needles, as the needle can be inserted first and the syringe coupled on to it afterwards.

The solution of cocaine should always be freshly made, and only boiled and filtered water used for the purpose. When cocaine was first introduced, it was used in 10 and even 20 per cent. solutions, as it was thought that the stronger it was, the more powerful would be its effect. It is now found that these concentrated solutions are unnecessary, and that a 4 per cent.

solution is sufficient for all practical purposes. By combining a little common salt with the cocaine, the solution acts more quickly, and will produce its effect in five instead of fifteen minutes. The solution I use is of 4 per cent. cocaine, 2 per cent. salt in boiled water.

Cocainè solution may be used in several ways. The seat of operation may be injected with it, or else the nerve trunks leading to the part may be injected at some little distance. The first method is usually employed for the removal of tumors, and suturing of wounds, and the firing of spavins. The latter method is limited to the surgery of the feet and legs, but is extremely useful in firing ringbones, and in operations on the feet.

For suturing wounds, the point of the needle is inserted beneath the cut edges of the skin, and a few drops injected. The needle is withdrawn and inserted again half an inch from the first puncture, and a little more injected, and so on until the whole margin of the wound is injected. The animal does not, as a rule, object very much to the passing of a sharp needle into the subcutaneous tissue, and it is unnecessary to puncture the skin. After waiting a few minutes for the cocaine to take effect the wound may be sutured without the animal showing the slightest pain.

For firing horses the use of cocaine abolishes pain so satisfactorily that it is seldom necessary to cast an animal for the operation, and the twitch is only used while injecting the part. Spavins, ringbones, and back tendons can all be fired in this way without the animal showing the least pain, and the operator is not hampered by the movements of the animal, and can perform his work more carefully and satisfactorily. One need only mention, too, the use of cocaine in removing foreign bodies from the eye.

Such, then, are some of the many advantages of anæsthesia, both local and general, in veterinary practice—the prevention of pain to our patients, and the great advantage to the operator of abolishing those sudden and violent manifestations of pain which

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are a great hindrance to skilful surgery on the lower animals. No impartial man can deny that these great advantages outweigh a hundred fold any slight trouble and expense connected with the use of anaesthetics. May the time come in the veterinary profession when it will be the rule and not the exception to make use of the means at our command for the control of pain, and then the reproach can no longer be hurled at us, that we are indifferent to the suffering we inflict on our dumb patients.

[WRITTEN SPECIALLY FOR THE AMERICAN VETERINARY REVIEW.]

WAS THE HORSE INDIGENOUS TO AMERICA ?

BY W. J. MARTIN, V. S., KANKAKEE, ILL.

From excavations recently made in a shell mound on Dauphins Isle, in Mobile Bay, there have been found many relics of the handiwork of prehistoric man that are of much interest to science. Among these relics may be mentioned a rude carving on stone which represents in outline the head and neck of a horse minus the ears. It has been claimed for these relics that they were the work of a race of people who built the shell mounds that are to be found scattered along the shores of Mobile Bay and the St. Johns River, in Florida. It is also asserted by many eminent archæologists that these people inhabited the southern portion of the American continent long before the people known as the mound builders came into the central and northern parts of the country.

If this find is authentic, and there seems to be no reasonable doubt that it is, as the name of the owner of the relics is given, it bears out in a remarkable manner the idea long entertained by me, that the horse was an inhabitant of the interior of this country at the time of its discovery by Columbus. We know from the study of paleontology, that the horse existed in immense herds on the plains of both North and South America long before the countries were discovered by the European race. So great indeed, was the period of time which the horse had been an inhabitant of this country, that we find its bones covered over

by many hundreds of feet of alluvial deposits of the Quaternary Epoch.

From the great variations in the size of the bones of the fossil horse found in America, it would be safe to assert that perhaps all the variations now so common among our domestic horses, was to a greater extent common among the fossil species. Bones of the fossil horse have been found in the quaternary deposits of both North and South America, that greatly exceeded in size the bones of our largest draft horses. From these downwards, all the variations in size can be traced by the bones of the fossil horse to animals that were even smaller than our present breeds of ponies. Not only are the bones of fossil horses found in this country that do not differ in any essential manner from the bones of our present race of horses, but there has also been found in many sections of this country the bones of an extinct animal from which our present horse species have descended.

It will be seen from the above, that the western hemisphere, instead of having been destitute of an indigenous race of horses (as it has been so long erroneously taught), was in reality the original home of the equine species and that it was by migration from this country that they spread over Asia and Europe. It has always been claimed heretofore that the horse had become extinct on the western hemisphere before prehistoric man had made his appearance in the country, and that previous to its introduction into the country by the Spaniards, the animal was totally unknown. It is true, that the graves of the mound builders have been most minutely searched in nearly all parts of the country, and of the vast amount of relics found in them, such as weapons of war and of the chase, household utensils and religious symbols, all more or less decorated or engraved with the images of the birds and beasts with which these people were familiar, no image of the horse has as far as I am aware ever been found previous to the one found on Dauphins Isle in Mobile Bay. This find would seem to prove conclusively that prehistoric man in America was quite familiar with the horse.

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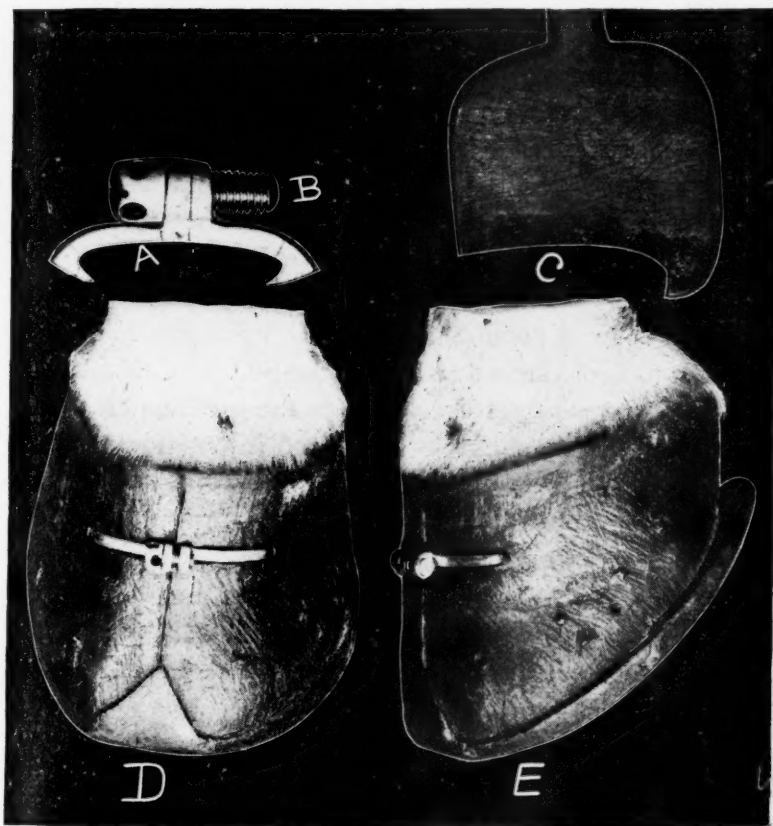


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CLASPS AND TOE-CRACKS.

Everyone knows how troublesome toe-cracks or quarter-cracks are, and also how numerous are the means of a palliative nature that are recommended. Everyone has tried them all—the band, the strap, the barring with nails, the Vachette clasps,



A—The two halves of the clasp. B—Screw to hold the halves together. C—Cautery to groove and notch the wall on each side of toe-crack. D—Front view of hoof with clasp in position. E—Lateral view of hoof with clasp in position.

etc.,—and it may be difficult to say which offers the greatest advantage. A new mode of treatment was presented the other day by Manourcat, which is now claiming superiority. It is still a clasp and consists of two little metallic bands, about $2\frac{1}{2}$

to 3 inches long. At one end there is a hook, Vachette clasp style; at the other a little band, raised perpendicular to the rod, and which is perforated with a thread cut through the hole. The correspondings of each half of the clasps are made to meet and are brought together by a screw which can be made tight, more or less, so as to hold firmly together both edges of the crack when the instrument is in place. A cautery, made also Vachette style, is necessary to burn in the wall a notch to permit the introduction of the hook of the clasp, and also make a groove for the reception of both metallic rods which once screwed together prevent any motion of the two edges of the seamed wall. It is claimed that this instrument will hold firm forever, and permit the essential requirements for radical recovery to take place, viz., the cicatrization of the solution of continuity at the coronary band.

What was most peculiar and to our mind most amusing in the presentation of the instrument at the Société Centrale was the objection that was raised in relation to the publication of figures illustrating the instrument by itself and in position on the foot—under the pretext that it would be too expensive, not for this case only, but a bad precedent, as others might demand the same. As those publications are made in one journal, and as that journal, we believe, is a handsome paying institution, to us, with our American ideas of go-ahead in journalism, the refusal to have a wood-cut made under the excuse given above, has seemed to us very peculiar, to say the least.

More liberal than our French *confrères*, I send you the wood-cuts from photos by Prof. Lignieres, of Alfort, which will make the whole description more interesting. A. L.

PARIS, FRANCE, July 10, 1897.

THE MANITOBA VETERINARY ASSOCIATION is of opinion that the name of the United States Veterinary Medical Association should be changed to the American Veterinary Association, so that the veterinarians of Canada and other American countries might be encouraged to affiliate.

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REPORTS OF CASES.

INFECTIOUS PNEUMONIA IN NORTH CAROLINA.

By J. W. PETTY, V. S., Greensboro, N. C.

I was sent by the North Carolina Board of Agriculture on March 26th, to investigate an outbreak of what proved to be infectious pneumonia, at Summerfield, N. C. A post-mortem was held on one gelding that had died, and the lungs showed circumscribed cavities, some of which contained gangrenous fluid, others pus, and some broken-down lung tissue, all of which illustrated the different stages of the disease and the progress made upon different parts of the lungs. All the animals that had been sick for ten days died. Three horses were at this time in the congestive stage, and two had elevated temperatures, cough, loss of appetite, and restlessness, and some had profuse diarrhoea, while others again were constipated. All the sick and exposed animals were at once quarantined, the sick being treated with acetanilid as required to control fever, muriate of ammonia, cinchona, whiskey, and other stimulants as indicated, with due attention to the regulation of the bowels, ventilation, clothing, etc. The exposed ones were isolated and treated with prophylactics, only one of them contracting the disease. All made good recoveries with the exception of slight abdominal breathing as a result of the cavities in the lungs.

HERMAPHRODISM.

By J. A. COUTURE, V. S., Quebec.

On July 7th last, a curious case of so-called hermaphrodisism was brought to my notice. It was a Canadian pony, about 15 hands, twelve years old, very nice looking animal, bred and owned since birth by a farmer living in the mountains of the County of Charleroi, in the Province of Quebec.

The subject had a pair of normal inguinal testes, which gave issue to a yellowish liquid when drawn by the fingers. In exploring the inguinal region I felt near the inguinal rings two testicles, the size of a hen's egg; these testicles were floating and might be either drawn up close to the ring or let down. The anus was much smaller than the normal. Looking at a distance, when the animal's tail was kept elevated, one would think that he had a normal vulva, though much longer than usual. By a closer examination it could be seen that this part was closed, divided by a raphæ, like the scrotum, and opened only at the bottom part by an opening measuring one and one-

half inches. The lips of this opening were thin and not large enough to close it entirely. Protruding slightly through this opening was the meatus of a penis devoid of its glans. When the animal was brought near mares this rudimentary penis was erected and protruded about six inches outside. Its size was about one and one-half inches in diameter when erected.

I am sorry that circumstances did not allow of a thorough examination to see if there was a uterus and what was the course of this rudimentary penis. I am, however, inclined to think that there was no uterus and that the animal is a male with penis taking a posterior direction instead of an anterior one.

POLYURIA FROM TURPENTINE IRRITATION.

By J. W. PETTY, V. S., Greensboro, N. C.

I was recently called to investigate a supposed contagious disease, where ten horses in one stable showed every symptom of diabetes—wasting of flesh, profuse diuresis, etc. Investigation showed that a pile of pine sawdust that had been used for bedding had drained into a shallow well only a few yards down the hill, from which the horses were watered. The turpentine could be tasted in the water, and it was very evident that absorption from the pine dust was the cause of the trouble. Of course I ordered watering from another well, and the horses returned to a normal condition.

DR. J. W. PETTY, of Greensboro, N. C., writes: "I have successfully treated two cases of tetanus with quinine in half-ounce doses three times a day, with belladonna and chloroform as needed. Horses with tetanus seem to stand a large amount of quinine."

THE TUBERCULIN TEST IN MASSACHUSETTS.

REPORT OF THE EXPERTS EMPLOYED BY THE LEGISLATIVE COMMITTEE.

In the July number of the REVIEW we printed the report of the joint committee of the Massachusetts Legislature, said committee having been appointed for the purpose of employing veterinarian experts to examine, destroy and hold autopsies on a large number of cattle in the vicinity of Lowell, which had been condemned as tuberculous by the tuberculin test in the hands of the agents of the Cattle Commissioners, it being the

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opinion of the law-makers that this procedure would settle for all time the disputed question as to the accuracy of tuberculin as a diagnostic of bovine tuberculosis. The report referred to embraced both a majority and minority finding, and both are based upon the conclusions of the experts, who are as widely different in their estimates of the value and consistency of the serum as are the legislative committeemen.

We begin this month the publication of the reports of the various veterinarians employed, which will be reproduced *in extenso*, that their full value may be appreciated by our readers, who may thus be better prepared to give a conclusion as to the merits of the important serum under discussion.

REPORT OF HAROLD C. ERNST, A.M., M.D.,

Professor of Bacteriology in Harvard University.

First Series.—Condemned Cows.

1. 10224. Tuberculous foci in the posterior pharyngeal, the mediastinal and bronchial glands; small foci in one udder gland.
2. 10203. Tuberculous foci in the mediastinal and bronchial glands, with suspicious appearances in the left udder and flank glands.
3. 9622. Tuberculosis foci in the bronchial and mediastinal glands and foci in the left flank gland as well, together with a suspicious appearance of the left udder gland.
4. 9697. Tuberculous foci in the bronchial and mediastinal glands.
5. 10254. Tuberculous nodules in the bronchial and mediastinal glands, together with several foci in the liver.
6. 96777. Tuberculous foci in the left retro-pharyngeal gland; all the mediastinal and bronchial glands badly affected, and the inguinal glands as well.
7. 10214. Lungs were adherent and showed several tuberculous nodules; the bronchial and mediastinal glands were badly affected, and there were several small tuberculous foci in the liver.
8. 9693. Tuberculous retro-pharyngeal glands on the right side; mediastinal and bronchial glands affected, as well as the lungs; udder nodular and swollen, but not distinctly tuberculous; a number of tuberculous nodules in the liver.
9. 10261. Tuberculous nodules in the bronchial and mediastinal glands; some nodules in the liver, as well as an abscess.
10. 9642. Negative throughout; reported not to have reacted, and should not have been presented for examination.
11. 9640. Lungs and adjacent lymph glands severely affected with advanced tuberculous process; the glands in the hilus of the liver also tuberculous.
12. 10234. Retro-pharyngeal glands severely affected with tuberculosis; bronchial and mediastinal glands and lungs extensively diseased; numerous nodules in the liver.
13. 10237. Tuberculous foci in the bronchial and mediastinal glands; udder gargetty.
14. 9667. Tuberculous foci in the bronchial and mediastinal glands and in the lungs, and extensive tuberculous disease of the intestinal glands.
15. 10288. Tuberculous disease of the bronchial and mediastinal glands; several nodules in the lungs.
16. 9630. Tubercular disease of the bronchial and mediastinal glands.

17. 9637. Tubercular disease of the bronchial and mediastinal glands.
18. 10262. Small foci of tuberculosis in the bronchial and mediastinal glands.
19. 10262. A number of small foci of tuberculosis in the bronchial and mediastinal glands; one small nodule in the lung.
20. 10298. Tuberculosis of the right retro-pharyngeal gland; bronchial and mediastinal glands affected; nodules in both lungs.
21. 9670. Extensive disease of the bronchial and mediastinal glands.
22. 9681. Extensive disease in the bronchial and mediastinal glands; tuberculous nodules in both lungs.
23. 9639. Tuberculous foci in the bronchial and mediastinal glands and in both lungs.
24. 9662. Tuberculous retro-pharyngeal glands (both sides); very extensive affection of both lungs, of bronchial and mediastinal glands, of glands in hilus of liver, and of the mesenteric glands.
25. 9679. Slight tuberculous infection of the mediastinal lymph glands.
26. 9671. Tuberculous infection of the retro-pharyngeal glands of both sides, of the mediastinal glands, and a few nodules in the lungs.
27. 9634. A few tuberculous nodules in the mediastinal lymph glands; abscesses near the gall-ducts.
28. 9675. Tuberculous nodules in the mediastinal lymph glands; a few nodules in the left lung.
29. 9695. Both retro-pharyngeal glands tuberculous; tuberculosis of the mediastinal lymph glands, and nodules in both lungs.
30. 9645. Tuberculous foci in the mediastinal lymph gland.
31. 9673. Tuberculous foci in the mediastinal glands; a small nodule in the anterior lobe of the left (?) lung.
32. 9631. Both retro-pharyngeal glands tuberculous; mediastinal glands show small foci; a small nodule in the anterior lobe of the left (?) lung.
33. 9611. Tuberculous mediastinal glands; several nodules in the left lung.
34. 9615. Tuberculous mediastinal glands; a small nodule in the left lung.
35. 9674. Tuberculous mediastinal glands.
36. 9646. Tuberculous retro-pharyngeal glands on both sides; mediastinal glands; nodules in both lungs.

Numbers 37 to 66 were examined upon a day when I could not be present, and the record of these animals will therefore be presented to the committee in the reports of the other experts present at the time. I have understood, however, that they all showed tuberculous lesions to a more or less marked degree.

67. 9625. Tuberculous foci in the left bronchial gland.
68. 9603. Small tuberculous foci in one mediastinal gland.
69. 9619. Tuberculous foci in the left bronchial and in the mediastinal glands.
70. 9607. Large and small tuberculous foci found in several mediastinal glands.
71. 9618. Mediastinal and left bronchial glands much enlarged and broken down in cheesy tuberculous masses; large cheesy nodule in left caudal lobe and a smaller one in the right caudal lobe.
72. 9604. Large softened tuberculous mass in the left bronchial gland; posterior mediastinal glands in the same condition.
73. 9661. No gross lesions of tuberculosis found. (Material saved for microscopic examination.)
74. 9660. Left retro-pharyngeal gland contained a large, cheesy, tuberculous nodule; all the bronchial and mediastinal glands enlarged and broken down (tuberculous); four large tuberculous nodules in the left caudal lobe and several smaller ones in the right lung.
75. 9684. Right retro-pharyngeal gland much enlarged and broken down (tuberculous); extensive enlargement and degeneration of all the bronchial and mediastinal glands; several large and cheesy nodules in the right caudal lobe and some smaller ones in the right middle lobe.
76. 10300. Small tubercular foci in the posterior mediastinal gland, several in the left bronchial gland and some minute tubercles in the other glands in this region.

77. 9650. A number of small tubercular foci in the bronchial and mediastinal glands ; a large broken-down nodule in the left caudal lobe and several smaller ones in the right lung.
78. 9657. Tubercular nodules in the left bronchial and several of the mediastinal glands.
79. 9668. Tuberculosis of all bronchial and mediastinal glands ; very large broken-down areas in both caudal and left ventral lobes ; discharging tuberculous material through the trachea.
80. 9672. Extensive tuberculosis of all bronchial and mediastinal glands ; minute foci in the right caudal lobe.
81. 9635. Numerous cheesy foci in retro-pharyngeal gland ; many small foci in bronchial and mediastinal glands ; degenerated foci in both caudal lobes
82. 9624. Tuberculosis of bronchial and mediastinal glands ; several foci in the lungs ; a small tubercle on gum near left incisor (?) tooth, reserved for microscopic examination (not completed).
83. 9627. All bronchial and mediastinal glands much enlarged and cheesy ; multiple broken-down foci in both lungs.
84. 9606. Large broken-down focus in left caudal and left ventral lobes.
85. 9652. Extensive tubercular deposits on pleura of both sides at anterior lobes ; bronchial and mediastinal glands much enlarged and cheesy ; numerous nodules throughout both lungs.
86. 9700. Tuberculous foci in all bronchial and mediastinal glands ; a number of small nodules in both lungs.
87. 9676. Small tubercular nodule in left bronchial gland ; several small foci in two mediastinal glands ; one calcareous nodule in right tracheal gland.
88. 9669. Tubercular nodule (small in right retro-pharyngeal gland ; multiple infection in all bronchial and mediastinal glands, which were several times enlarged ; two small nodules in liver.
89. 9602. Left retro-pharyngeal gland enlarged and broken down ; two small foci, one in each caudal lobe (tuberculous).
90. 10266. All bronchial and mediastinal glands much enlarged and broken down (tuberculous).
91. 9685. One-inch abscess in liver ; no gross tuberculous lesions found. (Gland reserved for microscopic examination.)
92. 10222. One small tubercle in left bronchial gland.
93. 9632. A number of small tubercular foci in bronchial glands.
94. 9680. A number of small tubercular foci in bronchial and mediastinal glands ; one small cheesy nodule in the right ventral lobe.
95. 9628. Small calcareous nodule in posterior mediastinal gland and smaller one in middle gland.
96. 9644. Middle mediastinal and left bronchial glands contain small tubercular nodules ; a large cheesy mass in the right ventral lobe.
97. 9672. Left retro-pharyngeal gland contained a single large cheesy focus ; three large (two-inch) foci in lungs, one (of same size) in liver.
98. 10238. Tubercular foci in the cervical gland, in both retro-pharyngeal glands, in all the bronchial and mediastinal glands, which were much enlarged and cheesy, many in both lungs, mesenteric glands, portal and renal glands ; and multiple foci throughout the liver.
99. 9691. Numerous foci in left retro-pharyngeal gland and several small ones in the left bronchial and mediastinal glands.
100. 10256. Bronchial and mediastinal glands much enlarged and cheesy ; several walnut-sized foci in right lung and one in left posterior lobe ; right udder gland nearly the size of an orange, and cheesy.
101. 10269. Single tubercular nodule in right retro-pharyngeal gland ; mediastinal glands and bronchial much enlarged and broken down ; disseminated tuberculosis throughout both lungs ; caseous foci in mesenteric glands.
102. 9664. Small tubercular nodules in middle mediastinal glands.
103. 9663. Many tubercular foci in mediastinal glands ; large nodule in right caudal lobe completely broken down ; several smaller foci in the same lobe.

104. 10294. A number of small tubercular foci in left retro-pharyngeal gland; several (three) mesenteric glands enlarged and calcareous; all bronchial and mediastinal glands enlarged and containing cheesy masses; very large tubercular mass in left caudal lobe and many smaller nodules throughout both lungs.
105. 10259. Cheesy tubercular degeneration of middle mediastinal glands; cheesy nodules in the mesenterics.
106. 10271. Left parotid much enlarged and cheesy; left retro-pharyngeal gland enlarged and cheesy; left bronchial gland enlarged and cheesy.
107. 10213. Middle mediastinal gland enlarged and entirely cheesy; one inch foul-smelling abscess in right bronchial gland.
108. 10218. Tubercular nodules in left bronchial and mediastinal glands; a small (one-half inch) focus in left caudal lobe.
109. 9693. Tubercular nodules in left retro-pharyngeal gland.
110. 10221. Three small tubercular nodules in left bronchial gland.
111. 10208. A small (one-half inch) cheesy tubercular focus in two mediastinal glands.
112. 10239. Several small tubercular nodules in posterior mediastinal glands and also in the left bronchial gland.
113. 9643. Large and small tubercular nodules in mediastinal glands; two-inch tubercular mass in right caudal lobe.
114. 9687. A few minute foci in bronchial and mediastinal glands, a larger one (one inch) in left retro-pharyngeal gland completely broken down; a number of minute tubercles in two portal glands; several abscesses (four) in right fore quarter of the udder.
115. 10270. Several minute nodules in left retro-pharyngeal gland; small calcareous tubercles in mediastinal and left bronchial glands; a single cheesy mass in left caudal lobe.
116. 10265. All bronchial and mediastinal glands much enlarged and filled with cheesy and calcareous deposits; a small nodule in the left caudal lobe.
117. 10217. Two small tubercular cheesy nodules in posterior mediastinal gland; slight tubercular infection of the mesenterics.
118. 9623. Left bronchial and posterior mediastinal glands contain numerous small tubercular nodules; somewhat larger mass (one-half inch) in posterior lobes of left lung.
119. 9698. Extensive tubercular pericarditis with adhesion; tubercular pleuritis with adhesions; extensive infection of the posterior mediastinal glands and tubercular infection of the portal glands and the surface of the liver.
120. 10277. Tubercular nodules in posterior and middle mediastinal glands.
121. 10226. One minute nodule in an axillary lymph gland, yellowish in color (reserved for microscopic examination, page 10).
122. 9610. Nothing found. (Reaction only slight, not sufficient for condemnation).
123. 10219. A single calcareous nodule in left bronchial gland.
124. 9688. A bunch of small cheesy tubercles in right udder gland.
125. 9655. Small tubercular nodule in left bronchial gland and a number of similar nodules in posterior mediastinal gland.
126. 9616. Cheesy tubercular nodule in mediastinal gland and in left caudal lobe.
127. 10279. Small (one-quarter inch) tubercular nodule in left bronchial and mediastinal glands, and a single similar one in left caudal lobe of lung.
128. 9633. Left retro-pharyngeal gland much enlarged and cheesy; left cervical gland in same condition; cheesy nodules in mesenteric glands.
129. 10263. Multiple cheesy nodules in left bronchial gland.
130. 9654. Several cheesy tubercular masses in right retro-pharyngeal gland; a single deposit in left bronchial gland; a number of the mediastinal glands infected; a single (three-quarter inch) cheesy tubercular deposit in the right caudal lobe.

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Second Series.—Uncondemned Cows.

This series comprises the animals that were slaughtered on the last day. They had been tested with tuberculin some five weeks previously, at the same time as the preceding, but had not been condemned as tuberculous.

1. 9103. Healthy.
2. 0145. A number of fairly large broken-down tuberculous nodules in right tracheal gland; multiple tubercles in one mediastinal gland.
3. 9132. Multiple tuberculous foci (small) in left bronchial gland and in upper mediastinal gland; a single small tubercle in right caudal lobe; a flat suspicious-looking nodule on external muscular surface of the abdomen.
4. 9158. Healthy.
5. 6576. Abscess in liver; non-tuberculous.
6. 9137. Healthy.
7. 9117. Abscess in liver; non-tuberculous.
8. 9194. Healthy.
9. 6524. Healthy.
10. 6558. Abscess the size of a hen's egg; attached to the caudal lobe of the right lung and to the diaphragm; non-tuberculous.
11. 9184. Healthy.
12. 9101. Healthy.
13. 6530. Multiple abscesses in liver; non-tuberculous.
14. 9162. Minute tubercles in both mediastinal glands; a small one in the right caudal lobe.
15. 9173. A single calcified pin-head nodule in one left bronchial gland.
16. 9167. Healthy.
17. 9119. Posterior mediastinal gland contained one minute nodule, no other lesions. (Reserved by Dr. Smith for microscopic examination; since reported upon by him as non-tuberculous.)
18. 9104. Several minute tubercles in left mediastinal and bronchial glands.
19. 9176. Healthy.
20. 6587. Several minute tubercles in posterior mediastinal glands.

Of these 20 animals that had been tested with tuberculin and not condemned, there appear to be 6 that show signs of infection at the post-mortem examination. It is unfortunate that they were not all re-tested just before the slaughtering, for it is quite open to question whether in some of them the infection did not occur *after* the first injection of tuberculin. *In none of them was there any extensive infection.*

Summary.

One hundred and thirty animals tested with tuberculin and killed in the presence of experts called by the special joint committee of the Legislature. I was present, and examined 90 of these. One (No. 10) should be omitted, for the reason that it did not react and was not condemned, having been sent with the others by accident. This leaves 89 that I saw and examined in person. Of these, No. 91 presented no gross lesions, and there has not been sufficient time to complete a microscopic examination; No. 122 reacted to the test so slightly that the animal should not have been condemned; and the tubercle reserved for microscopic examination from No. 121 has not yet been satisfactorily studied. The 30 animals that I did not see and examine all presented satisfactory evidence of tuberculous infection,

and, considering the two, Nos. 91 and 121, to be non-tuberculous, the percentage of accuracy is very great; slightly more than one per cent. of the animals were condemned unnecessarily.

On the other hand, of the 20 animals selected from the remainder of the herds that were tested and not condemned, 6 were found to be undoubtedly tuberculous, but none of them extensively so. Of these 6, 1 (No. 15) presented but a single minute lesion, and that in an inactive stage, so that the probabilities are that her condition was one of recovery; in at least 3 others (Nos. 14, 18 and 20) the lesions were so small that it is an open question whether the infection might not have occurred *after* the test was made, and before the examination,—a period of, as I understand, five weeks.

Counting all of the apparent mistakes as actual errors, however, it gives a percentage of variation of 5.5; the error in the direction of unnecessary condemnation being much less than in the line of allowing slightly infected animals to pass.

Respectfully submitted,

HAROLD C. ERNST, A.M., M.D.,
Professor of Bacteriology in Harvard University.

REPORT OF THEOBALD SMITH, M.D.,

Professor of Comparative Pathology in Harvard University.

JAMAICA PLAINS, MASS., May 10, 1897.

To the Special Joint Committee authorized to investigate certain cattle belonging to farmers of Dracut and Lowell.

GENTLEMEN :—It has been possible for me to attend the post-mortem examination of 112 of the cattle condemned by the tuberculin test. Of this number I regard 4 as free from tuberculosis and 108 as infected.

The infected I have divided, in accordance with the notes taken at the autopsies, into five categories, according to the severity and extent of the disease. In these five categories the animals may be tentatively placed as follows :

22 in first category (very slight disease).

36 in second category (slight disease).

28 in third category (moderate disease).

16 in fourth category (fairly severe disease).

8 in fifth category (extensive disease).

Of the 20 animals killed, which had failed to react after the

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injection of tuberculin, I was able to examine every case. These may be divided as follows :

- 14 free from recognizable tuberculosis.
- 3 affected very slightly.
- 3 slightly diseased.

For your convenience, I have entered every case examined by me on the accompanying table. The crosses signify tuberculosis of the organs indicated at the head of the respective columns. The extent of the disease in each organ is expressed approximately by the relative number of lines composing the cross.

Respectfully submitted,

THEOBALD SMITH, M.D.,

Professor of Comparative Pathology in Harvard University.

REPORT OF GEORGE N. KINNELL, VETERINARIAN.

The Tuberculosis Committee, Massachusetts Legislature.

GENTLEMEN :—Reporting on the animals slaughtered at Brighton April 14, 15, 16 and 21, also on May 4, I find that we killed and examined in all 150 head, classified as follows :

Animal condemned on physical symptoms.....	1
Animals that reacted to tuberculin test	129
Animals that did not react, but killed for purposes of investigation.....	20

In the cow condemned on physical examination, No. 10, ear tag 9642 (Osborn Merrill), no tuberculous lesions were discovered, but she was found to be the subject of multiple abscesses and fistulous tracts, involving the second stomach, the liver, diaphragm and bases of both lungs. The diseased condition was determined by a foreign body passing from the second stomach and penetrating towards the heart. The symptoms which this condition gives rise to, viz., coughing, difficulty in breathing and emaciation, are symptoms which, in making a physical ante-mortem examination, may readily be mistaken for the evidences of an advanced stage of tuberculosis.

Of the 129 reacting animals, 125 showed lesions of tuberculosis palpable to the naked eye.

Of the remaining 4 cows, 1, No. 121, ear tag 10,266 (E. T. Fox), showed an abnormal condition of one of the axillary lymphatic glands ; but whether or not of a tubercular nature is a point which can only be settled by a bacteriological examination.

This leaves three animals to be accounted for. They were as follows :

No. 73, ear tag 9612	E. A. Jones.
No. 91, ear tag 9685	R. S. Fox.
No. 122, ear tag 9610	R. S. Fox.

Of these I have nothing to say, further than that the search for lesions of the disease was as exhaustive and as thorough as the circumstances would permit, and, so far as gross appearances were to be trusted, no evidences of tuberculosis or of any other disease were to be found.

A thorough ocular examination of the various bones was not, under the circumstances, practicable, and the bacteriological examination of the tissues is a matter for delicate microscopic research and prolonged inoculation experiments upon living animals.

To sum up: of 129 reacting animals there were:

Positively tuberculous	125
Questionable (No. 121)	1
Negative (Nos. 73, 91, and 122)	3
Total	129

Percentage of error, approximately, $2\frac{1}{3}$ per cent.

In the 20 non-reacting animals slaughtered for purposes of investigation, I found as follows:

Non tuberculous	13
Tuberculous	6
Questionable	1

The tuberculous animals were these, viz.:

No. 2, tag 9145	Jones.
No. 3, tag 9162	Merrill.
No. 14, tag 9162	Jones.
No. 15, tag 9173	Merrill.
No. 18, tag 9104	Thissell.
No. 20, tag 6587	Merrill.

In these animals the lesions were uniformly small and in the early stages. One of them, No. 15, tag 9173 (Merrill), had a minute calcified lesion in a bronchial gland, and was evidently a recovered case.

The questionable case was No. 17, tag 9119 (Jones). This animal was found to have in one bronchial lymphatic gland a small nodule, but whether or not of a tubercular nature can only be decided by microscopic examination.

To sum up the whole matter: leaving out the two questionable cases, and comparing the results of the examinations with the reliability of tuberculin as a test, we find that in 148 animals there were 3 which reacted that ought not to have reacted, and 6 which did not react that ought to have reacted,

making, in sins of omission and commission, a total of 9; or, in other words, a total error on the part of tuberculin of approximately $6\frac{1}{2}$ per cent.

Among veterinarians it is a well-known fact that all tuberculous animals do not react to a first tuberculin test; and, in order to ensure thorough work in picking out the diseased animals from a herd, it is essential that the reagent should be applied two or three times, at intervals of as many months. Used in this way, the test is practically infallible, and all diseased animals can be eliminated. Every wise farmer ought, for his own protection, to have his entire herd tested regularly every year, for the same reason that he will take care that the fire insurance policies on his stock or buildings do not lapse.

Respectfully,

GEORGE N. KINNELL,
Veterinarian.

PITTSFIELD, May 7, 1897.

*Notes on Post-mortem Examinations of Cattle slaughtered at Brighton
April 14, 15 and 16, 1897.*

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| No. 1. | Tag 10224. | A. J. Thissell. Tuberculosis of retro-pharyngeal lymphatic glands and of adjacent lung glands |
| 2. | 10203. | A. J. Thissell. Tuberculosis of the lymphatic glands adjacent to lungs. |
| 3. | 9622. | F. A. Jones. Tuberculosis of lymphatic glands adjacent to lungs. |
| 4. | 9697. | Osborn Merrill. Lungs adherent to sides; tuberculosis of adjacent lymphatic glands. |
| 5. | 10254. | Osborn Merrill. Pulmonary lymphatic glands diseased; tubercular nodes in liver substances. |
| 6. | 96777. | Osborn Merrill. Tuberculosis of left retro-pharyngeal gland, of adjacent lung glands and of inguinal lymphatic gland. |
| 7. | 10214. | O. Merrill. Lungs adherent to sides; adjacent glands tubercular; nodes in lungs and liver. |
| 8. | 9693. | E. A. Jones. Tuberculosis of right retro-pharyngeal gland, of both lungs and adjacent glands—a bad case; several nodes in liver. |
| 9. | 10261. | O Merrill. Tuberculosis of pulmonary lymphatic glands; nodes and abscess in liver. |
| 10. | 9642. | O. Merrill. No tubercular lesions; abscesses and fistulous tracts involving reticulum (second stomach), diaphragm, liver and bases of both lungs, due to a foreign body penetrating from stomach towards the heart. |
| 11. | 9640. | E. A. Jones. Lungs and adjacent lymphatic glands badly tuberculous; also hepatic lymphatic glands diseased. |
| 12. | 10234. | O. Merrill. Advanced tuberculosis of left retro-pharyngeal gland, of lungs and adjacent lymphatic glands; also numerous nodes in liver. |
| 13. | 10237. | O Merrill. Pulmonary lymphatic glands tuberculous. |
| 14. | 9667. | O. Merrill. Lungs and adjacent glands tuberculous; portal lymphatic glands badly tuberculous. |
| 15. | 10288. | O. Merrill. Lungs and adjacent glands tuberculous. |
| 16. | 9630. | O. Merrill. Pulmonary glands tuberculous. |

No. 17.	Tag 9637.	O. Merrill.	Pulmonary lymphatic glands tuberculous.
18.	10262.	O. Merrill.	Pulmonary lymphatic glands slightly tuberculous.
19.	10298.	O. Merrill.	Small node in one lung; adjacent glands tuberculous.
20.	10298.	O. Merrill.	Tuberculosis of left pharyngeal gland, of both lungs and of adjacent pulmonary glands.
21.	9670.	F. A. Fox.	Pulmonary glands tuberculous.
22.	9681.	F. A. Fox.	Pulmonary lymphatic glands badly diseased.
23.	9636.	F. A. Fox.	Tuberculosis of both lungs and of adjacent glands.
24.	9662.	F. A. Fox.	Tuberculosis of retro-pharyngeal glands, of both lungs, of adjacent pulmonary glands and of liver and adjacent glands.
25.	9679.	F. A. Fox.	Pulmonary lymphatic glands tuberculous.
26.	9671.	F. A. Fox.	Tuberculosis of retro-pharyngeal glands, of both lungs and of adjacent glands.
27.	9634.	O. Merrill.	Tuberculosis of pulmonary glands.
28.	9675.	F. A. Fox.	Tuberculosis of left lung and of adjacent pulmonary glands.
29.	9695.	F. A. Fox.	Tuberculosis of pharyngeal glands, of both lungs and of adjacent pulmonary glands.
30.	9645.	O. Merrill.	Slight tuberculosis of pulmonary glands.
31.	9673.	F. A. Fox.	Tuberculosis of one lung and of adjacent glands.
32.	9631.	F. A. Fox.	Tuberculosis of pharyngeal glands, one lung and adjacent glands.
33.	9611.	F. A. Fox.	Tuberculosis of both lungs and adjacent glands.
34.	9615.	F. A. Fox.	Tuberculosis of lungs and pulmonary glands.
35.	9674.	F. A. Fox.	Tuberculosis, of pulmonary glands.
36.	9646.	F. A. Fox.	Advanced disease of pharyngeal glands and of lungs and adjacent glands.
37.	9614.	Fox.	Tuberculosis of lungs and adjacent glands.
38.	10284.	O. Merrill.	Tuberculosis of lungs and adjacent glands.
39.	9601.	Fox.	Tuberculosis of right lung and adjacent glands.
40.	9626.	O. Merrill.	Tuberculosis of pulmonary lymphatics.
41.	10289.	O. Merrill.	Tuberculosis of lungs and adjacent glands.
42.	10264.	N. L. Peavy.	Small node of tuberculosis in portal gland.
43.	9659.	C. E. Jones.	Tuberculous node in lobe of right lung.
44.	9683.	C. E. Jones.	Pulmonary glands tuberculous.
45.	10287.	O. Merrill.	Tuberculosis of pharyngeals, of lungs and adjacent glands; also of liver.
46.	9608.	F. A. Fox.	Tuberculosis of lungs and adjacent glands.
47.	9617.	C. E. Jones.	Tuberculosis of lungs and glands.
48.	9629.	F. A. Fox.	Tuberculous growth on left stiflejoint, involving periosteum.
49.	10231.	O. Merrill.	Tuberculosis of lungs, adjacent lymphatic glands and liver.
50.	9620.	C. E. Jones.	Lungs and adjacent glands diseased.
51.	10293.	O. Merrill.	Lungs and adjacent glands tuberculous.
52.	9689.	F. A. Fox.	Tuberculosis of lungs and adjacent glands.
53.	9609.	Fox.	Lungs and adjacent glands tuberculous.
54.	10232.	O. Merrill.	Tuberculosis of pharyngeal glands and of lungs and adjacent glands.
55.	9621.	O. Merrill.	Tuberculosis of pulmonary glands.
56.	9613.	C. E. Jones.	Lungs and adjacent glands tuberculous.
57.	10243.	O. Merrill.	Tuberculosis of lungs and adjacent glands.
58.	10285.	O. Merrill.	Tuberculosis of pharyngeal glands, lung and adjacent glands.
59.	9665.	Fox.	Tuberculosis of lungs and adjacent glands.
60.	9638.	Fox.	Tuberculosis of right lung and adjacent glands.
61.	9660.	Fox.	Tuberculosis of bronchial lymphatic glands
62.	9656.	Fox.	Tuberculosis of lungs and adjacent glands.

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No. 63.	Tag 9666.	Fox.	Tuberculosis of lungs and adjacent glands.
64.	9682.	Jones.	Tuberculosis of pharyngeal glands and of lungs and adjacent glands (a very fat cow).
65.	9605.	Fox.	Tuberculosis of both pharyngeal glands, of both lungs and all adjacent glands, also of mesenteric glands and spleen.
66.	9658.	Merrill.	Tuberculosis of pharyngeal gland, of both lungs and adjacent glands, also of hepatic glands and mesenteric glands.
67.	9625.	Fox.	Tuberculosis of bronchial glands, slight.
68.	9603.	Fox.	Slight tuberculosis of bronchial and mediastinal glands.
69.	9619.	Fox.	Tuberculosis of bronchial and mediastinal glands; doubtful abscess in liver.
70.	9607.	Fox.	Tuberculosis of pulmonary lymphatic glands.
71.	9618.	Fox.	Pulmonary glands tuberculous.
72.	9604.	Fox.	Tuberculosis of left lung and adjacent glands.
73.	9612.	Jones.	No trace of any disease of any kind.
74.	9660.	Fox.	Tuberculosis of pharyngeal gland, both lungs and adjacent glands.
75.	9684.	Fox.	Tuberculosis of pharyngeal gland, in lung and adjacent glands.
76.	10300.	N. L. Peavy.	Tuberculosis of lungs and adjacent glands.
77.	9650.	Fox.	Tuberculosis of lungs and adjacent glands.
78.	9657.	Fox.	Tuberculosis of pulmonary glands.
79.	9668.	Fox.	Advanced tuberculosis in both lungs and all adjacent glands.
80.	9672.	Fox.	Tuberculosis of both lungs and adjacent glands.
81.	9335.	Fox.	Tuberculosis of post-pharyngeal glands, in both lungs and adjacent glands.
82.	9624.	Fox.	Tuberculosis of lungs and pulmonary glands; garget in udder.
83.	9627.	Fox.	Profuse nodes in lungs and glands adjacent.
84.	9606.	Fox.	Tuberculosis of lungs and adjacent glands; tubercular abscess at base of liver.
85.	9652.	Fox.	Tuberculosis of pleura, lungs and adjacent glands.
86.	9700.	Fox.	Tuberculosis of lungs and adjacent glands.
87.	9676.	Fox.	Pulmonary glands tuberculous; slight garget.
88.	9669.	Fox.	Tuberculosis of pharyngeal glands and pulmonary glands.
89.	9602.	Fox.	Tuberculosis of pharyngeal glands and lungs.
90.	10266.	Merrill.	Pulmonary glands diseased with tuberculosis.

Report of Cattle slaughtered April 21, 1897.

No. 91.	Tag 9685.	R. S. Fox.	Negative throughout.
92.	10222.	E. H. Fox.	Tuberculosis of pulmonary glands.
93.	9632.	R. S. Fox.	Tuberculosis of pulmonary glands.
94.	9680.	R. S. Fox.	Tuberculosis in lungs and pulmonary glands.
95.	9628.	R. S. Fox.	Mediastinal glands tuberculous.
96.	9644.	R. S. Fox.	Tuberculosis in lungs and adjacent glands.
97.	9692.	R. S. Fox.	Tuberculosis in retro-pharyngeal glands, in lungs and adjacent glands; also in liver and adjacent glands.
98.	10238.	F. P. Fox.	Tuberculosis in head glands, in lungs and pulmonary glands; also in mesenteric glands.
99.	9691.	R. S. Fox.	Tuberculosis in head and pulmonary glands.
100.	10256.	E. T. Fox.	Tuberculosis in lungs and pulmonary glands; also in liver and mammary glands.
101.	10269.	E. S. Fox.	Tuberculosis in glands of head, in lungs and adjacent glands; also in mesenteric glands.
102.	9664.	R. S. Fox.	Tuberculosis in pulmonary glands.
103.	9663.	R. S. Fox.	Tuberculosis in lung and pulmonary glands.
104.	10294.	F. P. Fox.	Tuberculosis in head gland, in pulmonary glands and in mesenteric glands.
105.	10259.	F. P. Fox.	Tuberculosis in pulmonary gland; also in mesenteric glands.

- No. 106. Tag 10271. Brown. Advanced tuberculosis in head gland, also in pulmonary glands.
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| 107. | 10213. | D. S. Fox. | Tuberculosis in pulmonary glands. |
| 108. | 10218. | F. P. Fox. | Tuberculosis in lung and adjacent glands. |
| 109. | 9693. | R. S. Fox. | Tuberculosis in left retro-pharyngeal gland. |
| 110. | 10221. | E. T. Fox. | Tuberculosis in pulmonary glands. |
| 111. | 10208. | D. S. Fox. | Tuberculosis in mediastinal glands. |
| 112. | 10239. | E. T. Fox. | Tuberculosis in pulmonary glands. |
| 113. | 9643. | R. S. Fox. | Tuberculosis in head gland and pulmonary glands |
| 114. | 9687. | R. S. Fox. | Tuberculosis in bronchial glands and in portal gland. |
| 115. | 10270. | D. S. Fox. | Tuberculosis in head gland, in lungs and pulmonary glands. |
| 116. | 10265. | F. P. Fox. | Tuberculosis in lung and adjacent glands. |
| 117. | 10217. | F. P. Fox. | Tuberculosis in pulmonary glands and mesenteric glands. |
| 118. | 9623. | R. S. Fox. | Tuberculosis in left lung and adjacent glands. |
| 119. | 9698. | R. S. Fox. | Tuberculosis in lungs and adjacent glands; also pleura and portal glands. |
| 120. | 10277. | E. T. Fox. | Tuberculosis in mediastinal glands. |
| 121. | 10266. | E. T. Fox. | A small node in left axillary lymphatic gland; uncertain of its nature. |
| 122. | 9610. | R. S. Fox. | Negative throughout. |
| 123. | 10219. | D. S. Fox. | Tuberculosis in bronchial glands. |
| 124. | 9688. | R. S. Fox. | Right mammary gland tuberculous. |
| 125. | 9655. | R. S. Fox. | Tuberculosis in bronchial and mediastinal glands. |
| 126. | 9616. | R. S. Fox. | Tuberculosis in lung and pulmonary glands. |
| 127. | 10279. | E. T. Fox. | Tuberculosis in lung and pulmonary glands. |
| 128. | 9633. | R. S. Fox. | Tuberculosis in pharyngeal glands; also mediastinal glands. |
| 129. | 10263. | E. T. Fox. | Tuberculosis in lungs and adjacent glands. |
| 130. | 9654. | R. S. Fox. | Tuberculosis in pharyngeal glands, in lungs and adjacent glands. |

(To be continued.)

RECTAL AND VAGINAL IRRIGATOR.

The accompanying illustration represents a new instrument for irrigating the rectum and vagina, invented by Herbert



Neher, D.V.S., the well-known veterinarian, of New York City, and which has been manufactured by John Reynolders & Co., of Fourth Avenue.

At our request, Dr. Neher has furnished the following de-

scription of the instrument ; and he will be pleased to write any of our readers who may desire further information.

The large tube is 12 inches long by $1\frac{1}{2}$ inches in diameter. The large openings at the apex are for exhaust to enter after the fluid has passed through the central tube (*a*). The flange (*b*) rests against the anal rim, and is perforated by an opening on each side, which are for a cord to be tied in, and this cord passes to a surcingle on either side of the animal. (*c*) is the exhaust tube, the fluid passing directly from this to the floor behind the animal, or rubber tubing is attached and the fluid is carried away and floor kept dry. The whole instrument is made of brass, heavily nickel plated, and is so made that it can be taken apart and cleaned in a few minutes.

BIBLIOGRAPHY.

FORMULAIRE DES VETERINAIRES PRATICIENS (Prescription Book for Veterinarians), containing about 1500 Prescriptions, made according to the New Therapeutic Methods, by Paul Cagny, Member of the Société Centrale de Médecine Vétérinaire and of the Royal College of Veterinary Surgeons of London. 1 Vol., 300 pages. Published by J. B. Baillière et fils, 19 rue Hautefeuille, Paris.

In writing this little book, Mr. Cagny has two objects in view :

1st. To present veterinarians with a *résumé* of therapeutic principles, based upon the recent changes in medical theories during the last few years. As long as methods must follow theories in their changes, the time had arrived in veterinary medicine to publish a prescription book, which would not rest any more on theories considered to-day as erroneous. 2d. To collect in the same chapter all the prescriptions proper for the diseases of a given organ. Thanks to the adopted plan, one can at a glance find the indications for a case of pneumonia or of enteritis, for instance.

The book is divided into 20 chapters, arranged as follows :
1. General therapeutics ; 2. Agents modifying the external cause of disease (antiseptics and parasitocides) ; 3. Those of the digestive apparatus ; 4. Of nutrition ; 5. Of the blood ; 6. Of the circulatory apparatus and of circulation ; 7. Of the respiratory organs ; 8. Of the nervous system ; 9. Of the organs of sight ; 10. Of the skin ; 11. Of the mammæ and milk secretion ; 12. Of the urinary apparatus ; 13. Of the genital organs ; 14. Therapeutic agents without any special functional action (electricity, hydrotherapy, massage, caustics, astringents, etc.) 15. Poisons and antidotes ; 16. Antivirulent medication ;

17. Therapeutics of operations; 18. Veterinary posology; 19. Contagious virus used for the destruction of noxious animals; 20. Toxines used for the diagnosis of contagious diseases.

To complete his personal information Mr. Cagny has taken advantage of the researches of the professors of the veterinary schools of Europe and also of the observations published in France and foreign countries.

SIXTH BIENNIAL REPORT OF THE STATE VETERINARIAN OF MICHIGAN, 1895-96. By E. A. A. Grange, State Veterinarian, Lansing, Mich.

The very full and lucid pamphlet bearing the above title comes to us with peculiar force, just at this time, for after scanning the 64 large and compact pages, teeming with the rarest and latest conclusions in modern sanitary medicine, only obtainable by men who are students and trained to study such complex propositions, we are taunted with the reflection that in this age of progress and civilization the trading in politics has caused the displacement of this man to make room for one devoid of these valuable attributes. We know nothing of the personality of the new appointee, beyond the information that he is a non-graduate, and that is sufficient to know that however good a citizen he may be, he cannot be competent to succeed Prof. Grange.

The body of the report is mainly filled by a very full consideration of the subject of tuberculosis in its various aspects, and is a valuable contribution to veterinary literature.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By W. V. BIESER, D.V.S., New York City.

RESEARCHES UPON THE ORIGIN OF HUMAN DIPHTHERIA FROM POULTRY.—A diphtheria of poultry different somewhat in its clinical aspect from the ordinary diphtheria of poultry, but, on the contrary, said to resemble human diphtheria very much, was dragged into Belgium through the importation of Italian hens and scattered broadcast over the country. The infected animals died in a few hours or at most in a few days of what veterinarians called "catarrhe contagieux." The animals secreted viscid mucous from the mucous membranes of the pharynx, eyes and nose, emaciated rapidly and died very quickly

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as a rule. The author seems to incline toward the ætiological identity of the disease with human diphtheria for the following reasons: *a*—A few cases of human diphtheria occurring in the families of owners of such infected poultry seem to point to this deduction. *b*—Antidiphtheritic serum seemed to exert a favorable influence upon the diseased poultry. *c*—Through the courtesy of Prof. Ermenghem, he is enabled to report the finding of a short bacillus, identical to the so-called pseudo-diphtheria bacillus, which, however, inoculated into guinea pigs had not the slightest effect upon them. The author considers this bacillus to be an attenuated diphtheria bacillus. His experiments are, therefore, not sufficient or conclusive enough to prove the origin of human diphtheria from an aviary source, although such a transmission is a probable one.—(*Berl. Thierärztl. Woch.*)

KOCH'S NEW TUBERCULIN [*Buchner*].—In the *Münchener Allgem. Zeitung* B says: "Koch's new tuberculin offers better prospects of success than his old tuberculin did, because he was more careful this time and did not, as he did formerly, limit his observations to infected animals merely, but made his observations on infected people also. The method of preparation of the new remedy bids fair to improve the results of its application in proper cases, because the new remedy is an entirely different product from the old one and must, therefore, necessarily give a different reaction. The old tuberculin obtained by the heating of cultures contained inflammatory and fever-producing elements, but not a single substance capable of producing immunization in the living body, as B. and his pupils conclusively showed. In order to produce a better tuberculin it obviously was necessary to obtain the bacillary contents directly and unaltered; the only difficulty lay in the carrying out of this project in the case of such small bodies as the tubercle bacillus. Koch's new tuberculin practically contains the contents of the tubercle bacilli unchanged, which contents, it is to be hoped, will immunize (if not cure) persons against tuberculosis." Koch's Method.—He first dries the tubercle bacilli; they are then finely rubbed; water is then added to obtain the bacillary contents in solution. Buchner and his pupils claim that they can produce a better tuberculin in the following way: Koch claiming that his new tuberculin cannot be improved upon, B. mechanically rubs the living bacilli in the moist (not dry) state with fine sand or gravel in order to avoid the accumulation of dust and then obtains the bacillary contents by means of a pressure of 400 to 500 atmospheres; he presses out the contents;

Koch dissolves them out; he presses out moist bacilli; Koch dissolves out the contents of dried bacilli; both utilize the principle of trituration, however, in getting out the bacillary contents.—(*Berl. Thierärzt. Woch.*)

BRAIN ABSCESS IN THE HORSE.—R. was called in to see a horse that ostensibly had been suffering from pneumonia for a week or so. Four days later meningitis was diagnosticated, and ten days later R. narrowed down his diagnosis to an abscess of the brain, situated in the posterior portion of the left lobe and near the surface of the brain, from the fact that there was *blindness* of the right eye. R. threw the horse, opened the skull by making an incision 5 c. m. long, but failed to localize the presumptive abscess. One week later he had the horse killed, and at the autopsy found the left lobe larger than the right and the pia mater congested. Just a few m. m. back of the posterior end of his former incision he detected a yellowish red area unconvoluted, strongly adherent, which yielded 32 g. of pus on incision. He failed to find the abscess during life merely because he hadn't made a big enough incision.—(*Berl. Thierärzt. Woch.*)

HYPERÆMIA OF THE SPLEEN IN SHEEP AS A MEANS OF DIAGNOSIS OF FORCED FATTENING OF ANIMALS BEFORE SLAUGHTER.—P. asserts that one finds the spleen enlarged to twice or thrice its natural size in sheep that were fat'ened before slaughter by an excess of drink or feed, without there being any other visceral changes noticeable. Such being the case, we have undoubtedly to deal with a physiological hyperæmia here which may not necessarily mean a pathological condition; but it must be admitted that the meat of such sheep is redder in color and does not look as healthy as it should.—(*Berl. Thierärzt. Woch.*)

ENGLISH REVIEW.

FOLLICULAR MANGE [*By X.*].—In a concise article in the *Veterinary Journal*, the author lays down the following facts: It seems that the disease due to the *demodex folliculorum* is getting more common, the contagious nature of the disease, though not very great, may be a cause of it; the diagnosis of the disease is very simple and ought to be made early; the symptoms consist principally in the appearance of the disease about the head first, then spreading to the fore legs and feet, and the sides, to become generalized to the rest of the body; there is no pru-

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ritis, hence no scratching; there are numerous pustules filled with purulent material, which burst and leave red crusts; there is emitted from the body of the animal a very strong, offensive mousy odor. Examinations of the fluid of the pustule with a low power is sufficient to detect the presence of the acarus. The treatment is important, as animals commonly die from it with marasmus. Tar and sulphur preparations with oil are useful—solution of Peruvian balsam in alcohol is preferable to an ointment of the same—liberal diet and tonics internally are also indicated.

UTERINE FIBROUS TUMOR.—Extracted from clinical notes of the Royal Veterinary College of London.—Prof. J. Penberthy records the case of an aged collie bitch which was admitted to the infirmary, the owner complaining of the swollen state of her abdomen. This condition was observed some six weeks previous, and was gradually increasing. As the animal had been in heat several weeks before it was supposed she was pregnant and her foetus dead. The abdomen large, pendulous and resembles that of a pregnant bitch; a large hard tumor is felt in the position of a uterus, which, perhaps, too smooth to be that organ, has still a certain irregularity, justifying the idea of the presence of pups. General health is good, except difficulty in walking. At one time there was some discharge from the uterus. No signs of ascites. The animal, after much hesitancy on the part of the owner, was destroyed, and the post-mortem revealed a hard, dense tumor, weighing $19\frac{1}{2}$ lbs., occupying the whole of the cavity of the uterus. On section the growth was pinkish-white and proved to be, on microscopical examination, an œdematous fibroma.—(*Jour. Comp. Path. and Therap.*)

TUMOR IN THE BRAIN OF A DOG.—The rarity of neoplasms in the brain of dogs is well known, and very great in comparison with those that are met with in horses. On that account the record in the *Jour. Comp. Path. and Therapeutics* by Prof. J. Penberthy is of unusual interest. The symptoms are described by the author as follows: "On being examined before admission, emaciation was well marked, the temperature normal, pulse slow but regular; the animal, though apparently capable of every movement, walked listlessly and with evidence of great debility. There was a strange, dull facial expression and the pupils were dilated. In the kennel, the sitting posture was generally assumed, the head and nose being directed to the right. As far as could be judged, the animal could see only fairly well, but the hearing was more evidently impaired, and

he was not easily aroused by calling. On being offered food, however, the patient readily came for and ate it. During his stay here, the appetite was good and there was no difficulty in swallowing. In the intervals between feeding times, the dog remained usually in one position in a listless state." On a slight supposition that rabies might be developing, the animal was placed under careful observation, but without results, and, after a proper time, a diagnosis of chronic cerebral disease was made and the animal destroyed. At the post-mortem an adenoma, as large as a walnut, was found attached to the vessels of the choroid plexus in the right lateral ventricle.

FOREIGN BODY IN THE STOMACH [*By Mr. W. T. Bolton*].—This is the history of a King Charles spaniel, which had never been sick up to the time he was called. He found that the dog had refused his food in the morning, and all at once commenced to vomit, purge, turn round and round in a circle and go into repeated attacks of convulsions. His breathing was hurried, his eyes staring and rather blood-shot. Removed to the infirmary of the author, he received some sedative medicine and the next morning, being in a dying condition, was given an intrathoracic injection of prussic acid. At the post-mortem a half-ounce weight was found wedged in the pyloric orifice, which it almost entirely blocked. On further inquiry as to the history of the case, the fact became known that some six or seven months previous the dog swallowed the weight, but that, as it did not seem to interfere with him, the accident was all forgotten.—(*Veter. Record*.)

FRENCH REVIEW.

CALCULARY CYSTITIS.—As a sequel of this affection, it is not uncommon to find that the meat of a steer becomes impregnated with an odor of urine which renders it unfit for consumption, even after the animal has been properly treated. Mr. Soulie, in the *Progrès Vétérinaire*, reports a similar case. A steer suffering with colic was treated by the owner with drenches of stimulant infusions, and to all appearance recovered. Uneasy, however, about his condition, the owner called Mr. S., who, after careful inquiry, finding the animal apparently well, and with the affirmation that the animal had passed urine, concluded it an attack of *cystitis à frigore*, and left, after recommending that the micturation of the animal be carefully watched. Four days later he was called again, and told that he had been misin-

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formed; that the steer had not micturated since his sickness. The condition of the animal proved it, his bladder was full, there were no urethral contractions, the hairs at the entrance of the sheath were dry, and at the second curvature of the S of the penis, a calculus was discovered. The animal was operated upon. The calculus was of blackberry form and of the size of a bean. Yet urine was not expelled freely; it was only by slight pressure on the bladder that a small quantity of urine passed through the natural way. The animal being still unable to make water, was killed the next day. At the post-mortem the meat was found having a very marked odor of urine; the bladder, not ruptured, contained a small quantity of fluid; the mucous membrane was inflamed and the meatus closed by a firm exudate, which had prevented the escape of the urine outwards, and yet, by its condition, permitted its infiltration in the tissues.

PREVENTION OF THE UMBILICAL INFECTIONS OF NEW-BORN ANIMALS.—This is the general advice of Prof. Nocard, published in all the veterinary papers, and we believe by governmental direction, as follows: Calves, lambs and young pigs are often affected, a few days after birth, with serious diseases, rapidly fatal; whatever is the seat of the disease, liver, peritoneum, pleura, pericardium, lung, or even the articulations, it has always the same origin: *is the consequence of an umbilical infection*, which takes place, at the time of delivery or shortly after, through the wound, resulting from the rupture of the cord. To prevent the disease, as early as possible after birth, one must: 1st. Carefully wash the umbilicus of each new-born with a fine sponge, sterilized by boiling it in a phenic solution (25 grammes of acid, one litre of water), and which is allowed to cool off until lukewarm. 2d. Dry the umbilicus with the same sponge, well squeezed out. 3d. Apply upon the umbilicus a small quantity of an ointment of vaseline 100 parts, boric acid 15 parts, thymol $\frac{1}{2}$ a part. 4th. Renew the application every morning for five days; at that time the umbilicus will be all cicatrized. At the time of parturition, and for several days following, the bedding of the animals should be kept thoroughly clean, and made with fresh and dry straw.

ITALIAN REVIEW.

SEROTHERAPY IN THE INFECTIOUS PLEURO-PNEUMONIA OF HORSES.—*The Clinica Veterinaria* of April publishes the following interesting notice of experiments made upon a number

of horses. 1. The following are taken from these experiments: Fifty horses were submitted to the treatment of serotherapy. 2. From Feb. 14 to March 23 thirty-two animals left the hospital completely cured. 3. Three horses only died during the serotherapeutic treatment, and of these two were inoculated when already in desperate condition. 4. The fifteen horses remaining under treatment are in good condition and much improved. 5. Sixteen horses, recovered of the infectious pleuro-pneumonia, were bled to obtain the serum. On an average each horse stood three bleedings. 6. The bleeding was made about ten days after the exit of the animal from the hospital. 7. Two litres of blood were extracted at each operation. 8. The highest number of injections required has been seven, the lowest two. The average has been four a day of 100 grammes of serum. The injection was made subcutaneously on the side of the neck, once a day. Nine other injections were also made in fourteen horses at the dose of 50 to 100 grammes by injection.

TETANUS CURED BY PHENIC ACID.—Mr. S. D. Francesco records in the *Clinica Veterinaria* a case of recovery of lockjaw well marked with stiffness of all the muscles of locomotion, contraction of the jaws, stiff ears, nostrils widely dilated, the membrana nictitans appearing suddenly on the eye at the slightest irritation, neck rigid, tail elevated, abdominal muscles powerfully contracted, respiration short and quick, pulse frequent. Temperature 40.5 to 41° C. The entire muscular system is contracted, trismus and pleurosthotonos well-marked. The treatment consisted of tracheal injections of a mixture of 2 grammes of phenic acid with 4 of glycerine and 100 of distilled water, divided in four doses, given one every six hours. Rectal phenicated injections—washes. Improvement was noticed after two weeks and in a month the animal entirely recovered.

ANGIOMA OF THE GLANS PENIS.—The same author records a case of this affection in a low-bred animal which had frequent hæmorrhages through the sheath, and which on examination, exhibited an extensive diseased condition which demanded immediate interference. The animal was cast, secured as for castration, the parts thoroughly cleaned and disinfected with phenol and sublimate. A catheter was introduced in the urethra, and an Esmarch bandage applied on the penis to prevent hæmorrhage. The amputation was made with the ecraseur. The catheter was left in a few days; micturation normal.

FIBROMA OF THE LEFT FLANK OF A HORSE.—The clinics

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of the Milan School under Prof. Lanzillotti-Buonsanti offer always something interesting, if we can judge by the records which are found in the *Clinica Veterinaria*. Here is one: A horse was brought to that clinic with a tumor existing for some time and little by little increasing; it was attributed to the blows of the spur of the one riding him. This growth, corresponding to the eleventh and twelfth left ribs, was the size of an orange, not very warm, slightly painful, hard, subcutaneous and not adherent by its base. The skin that covered it was sound and free. It was a fibroma, which must be removed. The horse was cast, the skin shaved and thoroughly disinfected, an incision (18 centimetres) made, the cutaneous flaps dissected, the tumor easily enucleated. Some little of the skin had to be excised to permit correct cicatrization. Stitches and drainage tubes were applied. Recovery took place in twelve days by first intention. The microscopic examination confirmed the diagnosis—a fibroma with limited calcareous infiltration.

FUNGOID GROWTHS OF ENORMOUS DIMENSIONS ON BOTH SPERMATIC CORDS OF A HORSE.—This is another from the Milan Clinic: A four-and-a-half-year-old, of low breed, was unable to work because of its condition. On the right as well as on the left scrotal region there was a very large swelling, with an ulceration on its centre, which permitted the introduction of the probe, several centimetres in depth. These tumors were about the size of a child's head each. The scrotum was infiltrated and adherent, the prepuce was œdematous. To be operated upon the horse was cast, put in dorsal position, Degive's method. After thorough disinfection, the right tumor was first operated upon. Dissected and isolated from the skin with the bistoury, the blunt ends of the scissors, the fingers, the healthy extremity of the cord was easily secured, with a strong ligature, as the tumor was entirely extra-inguinal. It was excised. The edges of the skin brought together and a drain tube put in place. Similar operation was made on the opposite side. Abundant irrigations of sublimate solution in the wound, on the skin and sprays of ethereal solution of iodoform. In eight days the drain-tubes were removed. Cicatrization by first intention was complete in eight days on the left side. On the right there remained but two little cutaneous sores on the edges of the wound. In thirty days recovery was complete. The two masses were of sarcomatous nature, the presence of the *discomyces equi* could not be detected.

RAY'S IN X AND EXPERIMENTAL TUBERCULOSIS.—Doctors

Fiorentini and Luraski have experimented on guinea-pigs inoculated with cultures of human tuberculosis. In a first series six animals were used, three inoculated, three witnesses. Submitted to the Roentgen rays during an exposure of forty minutes every day, it was shown that, when applied for eight consecutive days, it had arrested the development of the tuberculous process. In a second, the authors used stronger cultures. Two pigs received one cubic centimetre, and eight half of a centimetre. One of each division was submitted to the rays; the others were kept as witnesses. All of those last died with tuberculosis in a length of time varying between fifteen and thirty days. Of the other two, the one which received one cubic centimetre of culture was submitted to the rays every day for twenty-three days. After fifty-three days, much emaciated, he was destroyed and presented lesions of chronic peritoneal tuberculosis. The other, which had received half a cubic centimetre of culture, was submitted to the rays ten days after the inoculation, when he already presented a large tubercle at the point of inoculation, and signs of failing and loss of flesh. With the rays, the ventral nodosity disappeared, the animal increased in weight and is now in good condition. He was exposed for twenty-five days, forty minutes at each exposure. The authors, in conclusion, say that they cannot explain the beneficial influence of the X rays upon the tuberculous organism, but are satisfied in confirming by their experiments the results already obtained in France in the attempts made on their application to the treatment of the disease in man.—(*Giornale della Real. Soc. Veter.*)

BELGIAN REVIEW.

PELVIC ABSCESS IN A HORSE.—This lesion is not uncommon, sometimes very troublesome, in some instances fatal. The favorable end met by the patient of Mr. Verlinde, which is published in the *Journal de Bruxelles*, is very interesting. A horse was stopped from working for lameness of the right hind leg. The leg was swollen, hot and painful in its upper regions. The anus was prominent, deviated to the left; the animal moved with difficulty; the right hind leg had very limited motion; the tail was carried to the left. Defecation was difficult and painful, fæces small and maculated with pus. By rectal examination the size and location of the abscess were well made out. Rectal injections, emptying of the abscess by enlarging the fistulous tract it had in the rectum with the finger and with the lancet, washing

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of the cavity with sublimate injections was the treatment prescribed, and followed by apparent recovery after about four weeks. This was, however, only temporary, as after about the same length of time, all the symptoms returned, but less severe than before. The abscess had evidently refilled. This attack was relieved after a few days and the animal remained well for over three months, when he was again laid up, always for lameness of the right leg. This time no indication of rectal trouble could be discovered, the abscess of the rectum was all closed, but on the external face of the shank there was a big swelling, which increased daily and ultimately fluctuated. The abscess was opened, treated antiseptically and the patient was at last radically cured.

PROLAPSUS UTERI AND ITS TREATMENT.—A NEW APPARATUS.—Everyone knows how this diseased condition of our domestic females are troublesome and how severe the prognosis sometimes becomes by the difficulties that are present in the manipulations of reduction. When it is considered that mortalities of 68 per cent. in mares and 35 per cent. in cows are recorded, it is not surprising that the working practitioner is searching means which will give him better and more easily obtained results than those commonly in use, advantageous and successful as they have proved in some instances. It is to that effect that Mr. L. P. Gobbels has invented a new apparatus, very simple, and which at first reading seems to answer all cases. It consists in two bags of rubber or impermeable structure, placed one inside of the other, most *tightly* united together at their free border. They must be of sufficient dimensions to permit the reception of the protruding mass. The outside bag is made of thick, unelastic tissue and carries a little facet at its bottom. The inside bag is made of thin and yielding structure, slightly elastic, to stretch somewhat under the pressure applied upon it. This double bag is closed by a running string passed round its open mouth; on the circumference of this mouth are rings to carry ropes to hold the instrument when in place. The facet at the bottom of the outside bag is connected with rubber bellows (elastic bellows of an atomizer or an apparatus of Richardson). The use of the instrument is simple. The protruding organ is placed in the cavity of the inside bag, and the running string gently tied keeps the instrument steady; while with ropes starting from the rings of the circumference of the bag and passing on the flank, between the hind legs, over the back, to a surcingle or collar, it is kept in position. Then by filling the space between the bags, with air, (using the rubber bellows) or with

liquid, the soft inside structure is pressed against the protruding uterus; it pushes it back, slowly, evenly, from all sides, in every part, until without effort, struggle, injury of the membrane and without excessive work on the part of the obstetrician, the organ returns of its own accord, as it generally does when the reduction has reached a certain point.

PANCREATIC DIABETES IN A DOG.—Guided by the discoveries of Von Nering and Minkowsky and those of Chauveau and Kaufman, in relation to the influence of the removal of the pancreas and the action of the secretion of that organ in the peculiar function of glucose formation, Professor Lienaux, of Brussels, has published in the *Annales* the record of a post-mortem which shows that clinical observations in veterinary medicine can be found, as well as in human, confirming the correct demonstration of Von Nering and Minkowsky. The case was that of a little slut which presented all the evidences of diabetes glucosuria, polyuria, polydipsia, polyphagia, autophagia. Notwithstanding much care and selected diet she died in a most emaciated condition. The lesions of the liver were large and yellow; the pancreas difficult to find and is reduced to the size of a short cord, about 3 centimetres (instead of 20 to 40, the normal length), the cord is hard, of a dull white color and seemed to be part of the intestines. The kidneys presented nothing very particular; their capsule opaque, not adhering; the tissue proper pale. The microscopic examinations of the pancreas revealed all the characters of atrophy with epithelial degeneration.

SOME REMARKS UPON ANÆSTHESIA OF HORSES.—Prof. Hendricks, in the *Annales de Bruxelles*, after considering the various modes of obtaining anæsthesia in solipeds and of alleviating the sufferings of animals during operation without placing them under complete anæsthesia; also after observing how dangerous the administration of ether or chloroform may prove on account of the violent struggles of the animal during its administration; and how he has tried to prevent these or guard against their severity, records a mode of administration, to produce partial anæsthesia, which permits him to perform mild operations, or prevent the severe struggles of the animal. To this effect he places a large muzzle on the horse's nose; a thick sponge is at the bottom of it, chloroform is poured on it, little at a time and by degrees, sufficient anæsthesia is produced to permit the complete manipulations of casting without struggles and fear of accidents. [If our memory serves us right, this is a

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means which has already been tried. We personally made several attempts, but did not find the result as satisfactory as we expected.—A. L.]

PULMONARY EMPHYSEMA—ITS TREATMENT.—Mr. G. Gendens relates the good results he has obtained in two cases of this affection, where the symptoms were of such severity that the animal was entirely unfit and unable to work. After using the old treatment of progressive doses of arsenious acid without any good result, he had recourse to the preparations so frequently used by the advocates of dosimetric medicine, and thus administered twice a day a pint of beer containing three centigrammes of arseniate of strychnia, twenty-five centigrammes of arseniate of iron, two grammes of iodide of potassium. With this he recommended good hygienic measures and repeated frictions on the body. The improvement was quite marked in a week, and in two months recovery was complete.—(*Annales de Medec. Vet.*)

AMERICAN REVIEW.

CAT WITH TWO SPLEENS [*By James M. Richardson, New York*].—A cat had not eaten for three or four days. A diagnosis of duodenal obstruction was made, and warm enemas and castor oil administered. Six days later patient died in great agony, and post-mortem revealed a second spleen, which had been mistaken for obstructing body. It was surrounded by a mass of adipose tissue suspended in the mesentery of small intestines, and weighed three and a quarter drams. No abnormal changes in any other organs except a number of small ulcerations throughout small intestines.—(*Jour. Comp. Med. and Vet. Arch.*)

TRAUMATIC PERICARDITIS IN A COW—RECOVERY [*By Prof. W. L. Williams, Ithaca, N. Y.*].—The author narrates that in January, 1896, he attended a cow for tympany of moderate character, accompanied by painful respirations, grunting during expiration, with general stiffness and disinclination to move, which led him to suspect the ingestion of a pointed foreign body. After puncturing rumen, saline purgatives and carminatives were given, followed by apparent recovery. In four weeks he was again called, when the following symptoms presented themselves: Dullness, stiff, disinclined to move, feverish, dry muzzle, inappetence, tumultuous pulse (intermittent and irregular), with abnormal pericardial sounds. Referring to former

attack, diagnosis of traumatic pericarditis was made and an unfavorable prognosis given. Small doses of digitalis three times daily was the treatment, and in a few days improvement was marked, appetite returning, fever abating, movements more free, and milk flow increased. In the following June on reëxamination found a prominent tumor beneath and to right of sternum, in the angle formed by the ensiform and last costal cartilages. On opening a pint of grayish, very foetid pus escaped, and exploration of the cavity with the finger brought forth two irregular pieces of bone, resembling much a portion of the bone from a porterhouse steak, and as the cow had been continually fed upon kitchen scraps, it seems quite certain that a bone had in this manner been swallowed, inducing the indigestion first noted, penetrated the rumen, passing forward to the right posterior surface of the pericardium, after which it traveled to the right and downward, emerging partly decomposed at the point described.—(*Jour. Comp. Med. and Vet. Arch.*)

TETANUS IN A CAT [*By Dr. Otto Noack*].—Castrated June 5th, and on 14th showed stiffness of limbs, tail stiff and carried upwards, moving around with great difficulty; two hours later stiff all over; ears stiff and drawn together; skin between them drawn in folds; unable to move; could be taken up and put down like a wooden block; if placed on side no movement could be seen. Later in day trismus complete, unable to swallow, death occurring same evening.—(*Jour. Comp. Med. and Vet. Arch.*)

INTESTINAL HERNIA THROUGH GREAT OMENTUM IN A COLT [*By Dr. Geo. P. Tucker, Lincoln, Neb.*].—A yearling colt, presenting symptoms of digestive derangement for six to eight months, gradually increased until death from starvation. Autopsy revealed a loop of intestines about twelve feet from stomach which had perforated the great omentum and rolled on itself, forming a fibrous ring two inches thick surrounding the loop, so there was very little if any free portion of the omentum. Anterior to the loop the intestines were hypertrophied, and at the loop a cavity had formed as large as the stomach. Posteriorly the intestines were of normal size, with merely a peculiar mottled appearance.—(*Jour. Comp. Med. and Vet. Arch.*)

SUBCUTANEOUS INJECTIONS OF IODINE FOR SPAVIN AND RINGBONE.—In a pamphlet edition of the proceedings of the last annual meeting of the Manitoba Veterinary Association Dr. Spiers, of Virden, reports that he had read, some two years pre-

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viously, in one of the veterinary journals, an article on the treatment of ringbone and spavin by hypodermic injections of iodine. He has since tried the treatment in 10 or 12 cases and in every instance has effected a cure, so far as stopping the lameness is concerned. His method is to cast the horse in the usual way, and in case of spavin, inject about two and a half drachms of B. P. preparation in three or four different places a little above the seat of disease, so that it has a tendency to run down. There is less suffering than from blistering, and there is no suppuration following. Thoroughly cleanse and disinfect the needle, make the injections and allow animal to get up, the operation requiring no after treatment. It is recommended to have a large syringe, holding half an ounce, injecting once over the enlargement, and the other three a little above it. He has not found it necessary to repeat the treatment, and the patient should be laid up for three or four weeks, longer if possible.

COLLEGE ANNOUNCEMENTS.

AMERICAN VETERINARY COLLEGE.

The twenty-third annual announcement of this college for the session of 1897-98 is received, and is a neat little pamphlet of 55 pages. It is in the nature of an innovation, in that it contains the most complete record of its graduates that we have ever seen attempted, giving the full name of the alumnus, date of graduation, address, and the history of his career, so far as it refers to positions in educational institutions, national, State, and municipal governments, authorship of works bearing upon the profession, etc. With the close of the last session it had made the record of an even 600 graduates, and their history as detailed in the roster is an everlasting monument to the wonderful work which it has accomplished in distributing throughout the country so many men who have made their marks in the profession of their espousal.

The announcement devotes three pages of instruction to applicants for matriculation and admission, which has been carefully prepared and approved by the Board of Regents of the University of the State of New York.

The course is not materially changed from last year, and the governing faculty remains the same. In the adjunct faculty Dr. W. S. Gottheil has retired from the chair of Surgical Pathology and Practical Microscopy, and H. B. Ferguson, Ph. G., Phar. D., has been added as an adjunct to the chair of Botany.

NEW YORK STATE VETERINARY COLLEGE.

The second annual announcement of this college is received, and is probably the most exhaustive of a veterinary institution that has ever been issued in this country, covering every detail of information in reference to the administration officers, faculty, directory of the college, its foundation and objects, description of the buildings, admission under all circumstances, requirements for graduation, a schedule of the course of instruction, with a description of the various departments taught and the facilities for instruction, as well as many other details of interest to intending matriculants, including an appendix, in which are detailed the legal requirements of preparatory and professional study for graduation in veterinary medicine in New York State and the requirements for license to practice. The announcement contains many well-executed illustrations, chief of which is a new full view of the main building of the veterinary college, Morrill Hall (breeds and breeding), Moore Hall (chemistry), Dairy building, Law School and Library, a view of Cornell University and Cascadilla Bridge looking north, and another view looking south from the library tower, as well as the plans of the different floors of the veterinary college. The only changes in the faculty since the last announcement are the addition of Prof. Walter L. Williams, as Professor of the Principles and Practice of Veterinary Surgery, Zoötechny, Obstetrics and Jurisprudence, and Edward L. Moore, B. S., as demonstrator of Veterinary Anatomy.

UNIVERSITY OF PENNSYLVANIA—VETERINARY DEPARTMENT.

The thirteenth annual announcement and catalogue of this institution is before us, and gives full information of every detail that can interest prospective students. There are no important changes in the teaching or governing faculties, except the addition of Herman A. Christmann, V. M. D., as assistant demonstrator of veterinary anatomy. A comprehensive list of the members of the various classes shows that there were in attendance during the last session 50 students, 19 being of the third year, 16 of the second, 13 of the first, and two special students. An exhaustive description of the methods of teaching the various branches occupies the main part of the pamphlet, while the latter pages are full of details of interest to those interested. Half-tone views are given of the veterinary hall and hospital, the lecture and operating rooms, and the hospital for dogs and small animals.

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SALES OF VETERINARY DEGREES—PROF. LAW EXPLAINS.

NEW YORK STATE VETERINARY COLLEGE,
CORNELL UNIVERSITY, ITHACA, N. Y.

JULY 8, 1897.

Editors American Veterinary Review :

DEAR SIRs:—When the February issue of the REVIEW called upon me to name the veterinary colleges which had sold their degrees, I did remain "silent" out of consideration for the senior editor, who was not only cognizant of the vile transactions, but who twenty years previously had made precisely the same charges which I have been blamed for making in my address. I considered that it would have been uncomplimentary and discourteous to the senior editor to rush into the gap in his defense and my own, when he could so easily put the whole matter right by quoting his own words of so many years ago. But, now that the call is reiterated, permit me to quote the words of the editor in the first issue of the AMERICAN VETERINARY REVIEW, January, 1877, page 10 :

"In 1866, the Pennsylvania College of Veterinary Surgeons obtained its charter, and issued its first circular with the faculty organized as follows:—

Isaiah Michener in the Chair of Theory and Practice,

R. Jennings, " " " Pathology and Surgery.

W. R. Birch, " " " Materia Medica and Pharmacy,

J. M. Corat, " " " Anatomy and Physiology,

and with a corps of Clinical teachers (J. B. Raynor and T. J. Corbyn)."

"But, like Massachusetts, this school was doomed to no real existence—like her also, it was a school only in name, she had no building, no college proper; I am not sure that regular lectures were ever given, though they had use of the rooms of the Agricultural Society. But, nevertheless, we meet with many diplomas granted from that school, which, like a few headed Boston Veterinary Institute, have been unjustly and illegally granted and may be considered worthless."

If the REVIEW of to-day or any veterinarian who is too young to recall the events of that time, should desire any further information, he will find it in the later columns of the same journal. As examples may be quoted "*Philadelphia Veterinary Diploma Shop*," 1877, page 291, and "*Correspondence*," 1877, 301.

It is not the director of the New York State Veterinary College alone who is called in question, it is also the AMERICAN VETERINARY REVIEW and its senior editor. Nor is the subject a mere matter of opinion. The facts are established beyond all dispute.

The unbiased reader of my address must have noticed that "*surviving and honorable*" colleges were carefully excluded from the charge of selling diplomas. "*But short of this*" (the

sale of degrees) "*even the surviving and honorable colleges have been one and all prevented from achieving the status which the nature of the subject demanded.*"

The REVIEW deserves the highest praise for the stand it took in 1877 in holding up to obloquy the prime actors in these nefarious transactions. Under similar circumstances I would confidently look to the REVIEW to once more rise in its indignation and denounce the wrong. But why that which is commendable in the REVIEW should be felt keenly when expressed by me, it remains for my critics to make plain.

JAMES LAW.

"THE FUTURE OF THE VETERINARY PROFESSION."

Editors American Veterinary Review:

In the last issue of the REVIEW appeared an article by Dr. E. L. Volgenau on "The Future of the Veterinary Profession," which is such a pessimistic prophecy that the more weakly inclined among us may well be excused for deserting our ranks in wholesale numbers. As I greatly dissent from the views presented, believing as I do in a better future for the American veterinary profession, I shall briefly review the situation from a contrary standpoint.

No doubt it gives great pleasure to the older members of the profession, who have helped to fight the battles of progress during the last ten or twenty years, to see growing up a younger and perhaps better generation in whose hands they can ultimately lay the destinies of the profession when fate shall call a halt to their labors. Thus we appreciate their attempt at independent thought in speech and writing. But these recruits will not come from the ranks of the doubters or the discontents, or from those restrained by self-interest or by self-admiration; they will be those young men who are enthusiastic about their calling, who find satisfaction in their professional work without always counting the dollar, who are unselfish enough to consider the needs of others in a common cause; they will be those few who can lift their minds above their limited surroundings, and look upon things present and future with hopeful calmness and courage.

Such men will not worry about the bicycle and the horseless carriage, new contrivances which have only a limited usefulness. We find the bicycle principally in the households of the middle classes, who could never have afforded a horse or a very cheap one. To these people the bicycle is a means of ready and

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convenient transport to business, or a vehicle of pleasure by supplying a much-needed exercise in fresh air which they could never have received in any other way. We also find this machine in the barns of the wealthy alongside the carriage, the runabout or the family surrey, used for an occasional spin in the park. This observation shows that the bicycle has only superseded one kind of horse: the very cheap buggy-horse of the livery type. And it is well that it is so, for this horse was never much of an object of veterinary treatment, but rather of humane sympathy; an infirm, over-driven animal, tortured by those men and women who have to get rid of their surplus energy by over-exertion of some kind. For these people the bicycle, this lifeless machine, is just the thing. It produced the "scorcher," this new human fiend, who fears neither God, man, woman, child, beast nor the devil. Whenever I cross a scorcher on an open road I say "go ahead," for I would rather see him taking off the flesh from his own ribs than from those of an innocent driving-horse or saddler. Beyond these uses the bicycle has no others, for on bad roads and in bad seasons it is a nuisance. To be sure, enthusiasts claimed everything for it, and not long ago a United States infantry officer predicted that it would supplant the cavalry horse in future warfare. Yet the bicycle-corps lately organized in the Græco-Turkish war were easily routed by the Turkish cavalry and had to be disbanded forthwith.

The other modern invention, the so-called horseless-carriage, remains an experiment, or, rather, a "plaything," as styled by a recent writer in the *Engineering World*. He points out that the time of its operation is limited, that its motor-force is weak and that on poor roads these vehicles become unmanageable. He concludes by saying that the science of mechanics is far away from having solved the problem of producing and storing motor-force in railless vehicles in such an economic manner as is exhibited by the living horse. If their own scientists acknowledge their failure to construct a machine which will be a substitute for the traction-power of the horse, the life-tenure of this vehicle will be of short duration, or at least its application will be limited by its own shortcomings.

The depression of the horse-market which we have experienced during the last few years is a purely local condition confined to the United States. If Dr. Volgenau says that "from the four corners of the earth come reports of veterinarians taking up other professions or trades," his geography must be limited to the States. For more than twenty years I have followed the

workings of the veterinary profession on the continent of Europe, and from there, from Japan, from far-off Africa—these corners of the earth—come the news of a steady growth in the application of veterinary medicine and the general well-being of the profession. In the United States, too, the veterinarian has fared well for many years, although none has developed into a millionaire; only since the panic of 1893 has he suffered, but not much more so than other professions or those engaged in industry and commerce. No other cause can be found for all this than the "hard times" which have befallen our country, as it is easily proven by comparison with the active life of other nations. In England and Germany factories are working overtime, in the United States they are run with a limited force or entirely closed. In England and Germany horses bring higher prices to-day than they have for twenty-five years; in the United States common horses are sold for less than it costs to bring them up. It is as a United States Senator remarked to me not long ago: "Doctor, in this great country of ours it is either feast or famine!" If this is so the famine will vanish, the rays of better times will gradually appear on the firmament, and the American horse, bred more judiciously, and the American veterinarians, educated more thoughtfully, will yet have their feast.

But, agreed that the use of the horse should become limited, is veterinary medicine to become extinct? Dr. Volgenau himself does not believe this, for he admits that "as long as the cattle, sheep and hog interests of the country are of such magnitude there will always be a demand for veterinarians," and he also admits "that there will always be a demand for educated veterinarians as their field for usefulness broadens." What, then, makes him come to the conclusion that "if the bicycle has come to stay veterinarians will soon have to seek new fields and other methods of earning a livelihood." Surely the doctor has his observations and conclusions mixed up in a somewhat unphilosophical manner.

When the doctor further says that veterinarians are leaving the profession, he is correct. And I say: let them go! A year ago I met a former colleague who was running an elevator, another renewed his acquaintance with me while he was shingling a roof of a cottage, a third is a street-car conductor. All honorable occupations in their way! But these three men were of limited education, all three were graduates from a short-term college which has frequently claimed to be the most successful on the continent of America. Yes, the hard times, and the bicycle

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and the horseless carriage, if you want, have done their ruthless sifting among its offspring, and the time is coming when this college may fittingly write above its doors the classic proverb, modified for the occasion : *Sic transit gloria collegii!*

The doctor concludes his article by saying that in the future "it will not be what we can do but what we know!" I heartily wish it would be that way as I am one of those who find happiness in the pursuit of knowledge. But my experience has been the other way. In a profession so practical as ours, and in a country so commercial as ours, knowledge has no intrinsic value unless it can be applied with a direct and benefiting result.

To sum up, I will say: I don't believe that any invention of man is threatening the existence of the horse, this marvelous handiwork of creation; I don't believe that professional veterinary work will ever reap millions nor that pure veterinary knowledge will be adequately esteemed and rewarded by American institutions. But I do believe, that the heavy depression, the cruel ups and downs which many of us have experienced during the last few years will have a most wholesome effect, as they were a natural reaction against a too sudden rise of the American veterinary profession, unprecedented in the veterinary history of any other country. I do believe that young men with blood of decent ancestors in their veins, who are bright and well educated, who love the horse, the dog and the animal creation, should find the veterinary profession the most sympathetic. And I do believe that the proper growth of the American veterinary profession is yet to come, that if the time is ripe the right man will find the right place, be it as a practitioner, as a sanitary inspector, as experimenter or teacher, and that in time not distant he will again receive such pecuniary reward as to enable him to live an honorable and useful life.

OLOF SCHWARZKOPF.

SOCIETY MEETINGS.

UNITED STATES VETERINARY MEDICAL ASSO'N.

THE LITERARY PROGRAMME.

We present below a revised list of the papers to be presented at the Nashville meeting, corrected by Secretary Stewart up to July 24th, and we submit that it is a brilliant array of subjects and authors:

Dr. Leonard Pearson, "The Disposition of the Flesh of Tuberculous Animals."

Dr. T. D. Hinebauch, "The Action, Experimentally, of Tuberculin on Healthy Animals."

Dr. Chas. Ellis, "Our Milk Supply."

Dr. E. A. A. Grange, "Infectious Mammitis in Cows."

Dr. A. Youngberg, "Malignant Catarrh of the Ox."

Dr. J. W. Connaway, "Texas Fever Investigation."

Dr. Leonard Pearson, "A Review of the Field of Veterinary Science."

Dr. C. C. Lyford, "Radical Operation of Contracted Hoof."

Dr. M. E. Knowles, "Some Diseases of the Horse Peculiar to the Mountain Region."

Dr. W. H. Dalrymple, "The Veterinary Field in the South."

Dr. E. P. Niles, "The Necessity of Veterinary Instruction in Medical Colleges."

Dr. George N. Kinnell, "Bacteriology."

Dr. Wm. Dougherty, ——— (subject not yet stated).

Dr. S. J. J. Harger, ——— " " "

Dr. C. A. Cary, ——— " " "

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Resolutions.—Leonard Pearson, 3608 Pine St., Philadelphia, Pa. (Chairman); W. Horace Hoskins, 3452 Ludlow St., Philadelphia, Pa.; F. H. Osgood, 50 Village St., Boston, Mass.; S. Stewart, 7½ S. James St., Kansas City, Kans.

Intelligence and Education.—H. D. Gill, 154 E. 57th St., New York, N. Y. (Chairman); T. B. Rayner, 135 E. Gay St., West Chester, Pa.; Olof Schwartzkopf, Flushing, N. Y.; W. B. Niles, Ames, Ia.; W. H. Dalrymple, Baton Rouge, La.

Diseases.—Theobald Smith, Boston, Mass. (Chairman); Cooper Curtis, Moravia, N. Y.; E. P. Niles, Blacksburg, Va.; R. R. Dinwiddie, Fayetteville, Ark.; J. B. Paige, Amherst, Mass.

Resident State Secretaries.—See May REVIEW, page 138.

Dr. W. C. Rayen, Chairman of the Local Committee of Arrangements, has kindly furnished the REVIEW with the following

PROGRAMME OF ENTERTAINMENT.

Headquarters,—Tulane Hotel.

First Day.

Address of Welcome, by Hon. Jno. J. McCann.

Response, by President of the Association.

Business of the Association.

Ladies taken in charge by Local Committee, visiting Centennial in a body.

Second Day.

Morning.—Ladies visit Capitol, Phillips & Buttorff Manufacturing Company and other places of interest.

Afternoon.—Both Ladies and Gentlemen congregate at Union Depot for trip to Belle Meade. Returning at night, stop at Exposition.

Third Day.

Go as you please for gentlemen.

Ladies visit Exposition and take trolley ride around the city.

Banquet at Tulane.

Other attractions are under consideration, but have not matured sufficiently for announcement.

TRANSPORTATION INFORMATION.

The following letter to President Osgood is full of information for the New England members:

I submit to you herewith rates *via* M. & M. T. Co., Boston to Nashville and return;

tickets on sale Tuesdays and Thursdays, good fourteen days in addition to date of sale, \$32.55. Tickets on sale daily, good twenty-four days, in addition to date of sale, \$38.05. These rates include meals and state room accommodations on M. & M. T. Co.'s steamer. Upper-deck state room berths are \$2.50 extra in each direction. The steamer leaving Boston Thursday, September 2d, at 2 P. M., is due at Norfolk at 4 A. M., September 4th. Train *via* Southern Railway leaves Norfolk at 9.25 A. M., due in Nashville at 1.35 P. M., Sunday, September 5th. We are the only line running through car service from Norfolk to Nashville, and pass through the most beautiful scenery of Western North Carolina, "The Land of the Sky," thence *via* Knoxville and Chattanooga to Nashville.

President Osgood furnishes the following information: Through tickets can be secured in New York on Tuesdays and Thursdays, good to return within ten days for \$25.30. Sleeping-car rates are as follows: Berth New York to Nashville, \$6; section New York to Nashville, \$12; berth Washington to Nashville, \$5; section Washington to Nashville, \$10; berth Norfolk to Nashville, \$5.50; section Norfolk to Nashville, \$11.

A twenty-day ticket from Washington to Nashville is \$21.05, but a ten-day ticket is sold on Tuesdays and Thursdays for \$15.30.

NOTES.

No reason is left for doubt that our Southern friends are going to entertain us most royally.

The Hotel Tulane is new and up-to-date, having assembly and committee rooms, and every convenience. Rates will be \$1 per day and upward for rooms per individual. Meals on European plan or fifty cents straight.

Dr. Nelson, Pullman, Washington; Dr. M. E. Knowles, Butte, Mont., and Dr. T. D. Hinebauch, Fargo, North Dakota, are coming from the Far West, and Minnesota will send a strong delegation.

The New England members will go largely by boat from Boston via the M. & M. T. Co. to Newport News, and thence by the Southern Railway through the most picturesque country to Nashville. It will be a most delightful pleasure excursion.

Cornell will be well represented by Profs. Law and Williams.

All the principal railroad lines give special excursion rates to the Nashville exposition. Round trip sold on any day at eighty per cent. of regular price and on special days (Tuesdays and Thursdays—for ten and fifteen day limit) at much less.

Dr. W. C. Rayen, of Nashville, Tenn., writes the REVIEW as follows: "I am gratified to inform you that Southern practitioners are quite enthusiastic over the approaching meeting, and I now confidently expect that we will have a larger attendance than we had at Buffalo last year."

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Drs. C. A. Cary, of Alabama, and W. H. Dalrymple, of Louisiana, have been added by President Osgood to the local committee of arrangements.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The annual meeting of this society will be held in Syracuse on Sept. 14th and 15th, and, although the programme is not yet completed, it bears evidence of being one of interest and profit. Those two sterling workers—President Hinkley and Secretary Morris—are now busily engaged in putting the finishing touches on the details, and all members may go to the meeting with the assurance that it will be up to the standard in all respects. President Hinkley writes us under date of July 19th as follows: "From all indications I expect to see a very largely attended meeting, and one of more than ordinary interest to all of the profession."

Prof. James Law, of the New York State Veterinary College, will read a paper on "How to Prepare Contagious Products for Shipment to the Bacteriological Laboratory."

Prof. Roscoe R. Bell, of Brooklyn, has promised one on "Infectious Catarrhal Fever of Horses."

Dr. Geo. H. Berns has a postponed paper from last year on "Osteo-Porosis," and others are awaiting final announcement.

The REVIEW for September will contain the completed programme.

MISSOURI VALLEY VETERINARY ASSOCIATION.

The third annual meeting of the Missouri Valley Veterinary Association was held in Kansas City, Mo., June 9, 1897.

The meeting was called to order by President Dr. Stewart.

The Secretary, Dr. Hunter, being absent, Dr. Schaffter was elected Secretary *pro-tem*.

The first order of business was roll-call, the following members responding: Drs. Stewart, Bray, Moore and Schaffter. Members of the profession present were Drs. Heck, Steddom and Johnston.

The minutes of the February meeting were read and approved.

Correspondence between the Secretary and Dr. T. J. Turner was read, which requested his release from the association, on account of his inability to attend meetings, being located at Indianapolis. Upon motion, duly seconded, Dr. Turner's resignation was accepted.

Applications by Drs. Heck, Johnston, and Steddom were made for membership. The Board of Censors reported favorably upon the petitions, and, upon motion, duly seconded, they were declared elected members.

The President was authorized by the members to appoint a delegate to the United States Veterinary Medical Association, meeting to be held at Nashville, Tenn.

Dr. Moore read a paper on "Puncturing for Gastric Flatulence," which elicited a full discussion by all present.

Dr. Bray volunteered a talk on "Uses and Abuses of the Actual Caутery." A general discussion followed.

Election of officers for the ensuing year resulted as follows: President, Dr. S. L. Hunter; First Vice-President, Dr. Moore; Second Vice-President, Dr. McCurdy; Secretary and Treasurer, Dr. E. P. Schaffter. Censors—Drs. Heck, Johnston, Steddom, Black, and Bray.

Upon motion, duly seconded, the meeting adjourned to meet in Kansas City, Mo., in October.

E. P. SCHAFFTER, V. S., *Secretary*.

THE ASSOCIATION OF VETERINARY FACULTIES OF NORTH AMERICA.

The fourth annual meeting of the Association of Veterinary Faculties of North America will be held in connection with the United States Veterinary Medical Association, at Nashville, Tenn., Wednesday, September 8th, 1897. The following papers will be read:

"Uniform Courses of Instruction," Dr. John W. Adams, University of Pennsylvania.

"Minimum Standard of Entrance Examinations," Drs. D. E. Salmon, Columbia University, and Jas. Law, Cornell University.

"Uniformity of State Regulations Governing the Practice of Veterinary Medicine," Dr. W. Horace Hoskins, of Philadelphia.

The following are the officers of this Association for 1897: President, Dr. Leonard Pearson; Secretary-Treasurer, Dr. H. D. Gill. Executive Committee—Drs. James Law, M. Stalker, D. McEachran, D. E. Salmon, J. L. Robertson.

H. D. GILL, V. S., *Secretary*.

THE UNITED STATES EXPERIMENT STATION VETERINARIANS.

We are advised by Dr. A. T. Peters, of the Nebraska Agricultural Experiment Station, that the above association—which

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perfected a temporary organization at Buffalo, and which hopes to make it permanent at Nashville—will hold its meeting in connection with the U. S. V. M. A., only that it will have a separate day, Sept. 10.

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

The minutes of a very successful semi-annual meeting of this association, which took place at Owatonna, July 13th and 14th, have been received from Secretary Hay, and will be published in the September REVIEW.

NEWS AND ITEMS.

"THE AMERICAN X RAY JOURNAL" is published at St. Louis. The first number has just appeared. It is edited by D. Heber Roberts.

DR. E. A. A. GRANGE, late State Veterinarian of Michigan, has accepted the principalship of the Veterinary Department of the Detroit Medical College.

PROF. PENBERTHY, of the Royal Veterinary College, Camden Town, has been elected President of the Royal College of Veterinary Surgeons (England).

DR. CHARLES W. DABNEY has been appointed special agent in charge of the scientific and statistical investigation of the United States Department of Agriculture.

DR. W. L. WEST, late of Ellsworth, Me., has sold his practice to Drs. Caldwell and Pollard, and located in Belfast, Maine. He is Secretary of the Maine Veterinary Medical Association.

RHINOMETERS are devices to measure the amount of air a man breathes through his nose, in order that his doctor may compare it to the amount he should take in that way.

DR. A. B. MORSE, formerly an inspector in charge of the Government Meat Inspection at Sioux City, has been transferred to the quarantine service and stationed on the Mexican border.

A CAT belonging to Saloon-keeper Velte, of Newark, N. J., gave birth to five kittens, with but sixteen legs between them. Where the missing legs should be were ligaments binding all five cats together. All are well.

"OUR BROADEST FUTURE IS YET BEFORE US."—(Editorial in July *Journal of Comp. Med. and Vet. Arch.*) What a

peculiar complication of the affairs of life it would produce if we were to get our futures behind us.

At the last annual meeting of the Manitoba Veterinary Association, held in Winnipeg in February, the resolutions on tuberculosis passed by the Buffalo meeting of the United States Veterinary Medical Association were unanimously endorsed.

MARCUS DALY, of Montana, has cabled an offer to the owner of Galtee More, the Irish-bred race-horse who won the last English Derby, of \$125,000 and half of his turf earnings for that celebrated animal, his intention being to soon place him at the head of his wonderful stud.

Dr. W. G. CLARK, Secretary of the Wisconsin Association of Veterinary Graduates, has removed from Beaver Dam to Marinette, Wis., where he has formed a business partnership with State Veterinarian H. P. Clute. Members of the above association should address Dr. Clark, care Box 136, Marinette, Wis.

IS DOCKING A NECESSARY OPERATION?—At a meeting of the Lancashire (England) Veterinary Medical Association a paper on "Docking" was read by Mr. William Woods, F. R. C. V. S., and the following resolution was unanimously adopted: "That in the opinion of this society the docking of horses is a necessary operation."

THE PACING MARE MARION MILLS paced a full mile on the half-mile track at Combination Park, Medford, Mass., without driver or sulky, on July 6, in 2:05 $\frac{3}{4}$, in an effort to beat her previous record of 2:07 $\frac{1}{4}$, made under like conditions. Since then she has paced a full mile, without sulky or driver, in 2:04 $\frac{3}{4}$, some watches making it 2:04 flat.

A REMARKABLE ACCIDENT.—The usually very careful medical proofreader of the *Journal of Comparative Medicine and Veterinary Archives* must have been absent on his summer vacation during the typographical preparation of Prof. W. L. Williams' interesting report of a case of "Luxation of the Metacarpopharyngeal Articulation in a Horse."

DIED IN HIS SULKY.—A telegram from Rockland, Me., dated July 6, states: There was a sad climax to the races at the trotting park yesterday afternoon. As the horses came before the stand in the first half mile of the fourth heat, Dr. W. D. Farnham, driver and owner of Ikey M., swayed and fell from his sulky. When picked up it was found he was dead. Dr. Farnham was a veterinary surgeon.

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DR. SAMUEL J. BUCKLEY has been reëlected to the Chair of Veterinary Science in the Maryland Agricultural College. He writes that his facilities as head of the Experiment Station will be increased, as a new barn and a separate building for hospital and office are in course of construction. He will attend the Nashville meeting of the Experiment Station Veterinarians and U. S. V. M. A.

NEAPOLITANS have a bad reputation for ill treatment of animals, and the Naples, S. P. C. A. seems to have plenty to do. During last year its agents stopped 44,321 carts for carrying too heavy loads, and in nearly one-half the cases had the load reduced; they confiscated 41,011 sticks used for beating animals and 887 spikes used on curb chains; 2282 convictions for cruelty were obtained.

SPAYING THOROUGHbred FILLIES.—Col. Clay, of the Runnymede, has started in to carry out his plan in regard to reducing the production of thoroughbreds. He has already had three fillies operated upon as an experiment. They are doing so well after having the generative organs removed that some more of the troop of fillies will be operated on, and Col. Clay is doing all he can to have his fellow-breeders follow suit.—(*Breeder's Gazette*.)

ANTHRAX IN TEXAS.—Sporadic cases of charbon are being found near Houston, and the fear is prevailing of an epizootic outbreak. Dr. M. Francis, State Veterinarian, with the assistance of Dr. Burkey, of Galveston, is inoculating the horses of that city. Dr. W. A. Knight, of Houston, reports the finding of cases almost daily, which are removed without the city limits and quarantined. The *Houston Daily Post*, of July 9th, prints a picture of a mare affected with the disease, with foal at her side.

PROGRESS OF THE HORSELESS CARRIAGE.—The guideless wonder, Pacing Johnnie, was very much more of an attraction at the recent Omaha meeting than the horseless carriage. The motorcycle did all right enough for a quarter mile or so, but it then became unruly and bolted into the fence, throwing its operator over the rail. It kept crowding on into the fence until it was recaptured, its "pilot" picked up and ministered to, the levers set in place again and the outfit led gently away.—(*Breeder's Gazette*.)

FAMOUS PACING DOG DEAD.—Sport, the famous pacing dog, owned by G. W. Redfield, of Galesburg, Ill., a familiar and

popular figure at harness meetings for several seasons past, died at Galesburg, June 10, of pneumonia. He had just recovered from an attack of enteritis, and was unable to rally against a second critical disease. He held three world's records—an eighth in $18\frac{1}{4}$ seconds, a quarter in $38\frac{1}{4}$ seconds, and a half in 1:30—and was undoubtedly the fastest canine wiggler yet seen. His skeleton will be mounted by a skilled taxidermist. He was nine years of age.

AMERICAN HIGH-STEPPERS AT THE ENGLISH SHOWS.—Mr. George B. Hulme met with great success in his venture in taking several horses to England to compete in the horse shows of that country. His lot consisted of six chestnuts, the best known of which were Marksman and Cracksman, and in all the campaign covered six shows, winning thirty-five prizes. At the Crystal Palace they won 14 prizes, 1 championship, 1 reserve championship, 3 firsts (Marksman 1st), 1st in single harness, 1st pair in harness. In these classes his horses were matched against England's champion cobs.

RABIES IN NEW JERSEY.—A large St. Bernard dog, apparently suffering from rabies, has been keeping the town of Elizabeth in a state of siege, biting children and innumerable animals. Although every effort was made to destroy the affected animal he eluded his pursuers, keeping up his death-dealing attacks, however. Finally the Board of Health held a special meeting, and Veterinarian F. A. Zucker was placed in charge of the case with instructions to procure necessary assistance to capture the rabid animal and to destroy all dogs known to have been bitten by him. We have not heard the result of the efforts of the vigilance committee.

AMERICAN HORSES IN ENGLAND.—The *Mark Lane Express*, in reviewing the foreign trade of Britain for the first quarter of the year, says: "But if the horse exports have increased, the imports have done so in a far greater degree, for they reached the enormous figure of 11,517, instead of 9210 for the corresponding first quarter of last year. Further, when we find that no fewer than 8407 of these came from the United States, we know that a great many of the Shire and Clydesdale breeds were among them. The Americans, who were such good customers to our breeders ten or a dozen years since, now compete with them not only abroad but in their own markets here at home by sending over big shipments of the progeny of mares and stallions they procured from this country a long time

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since. When all this is considered we need scarcely wonder at the slackness of demand and sluggishness of trade which has been complained of in the agricultural horse circles of late."

EXPERIMENT STATION BULLETINS.—A wonderful improvement is manifest in the literature of the experiment stations of the various States. In the last issue of the REVIEW we took cognizance of the very valuable contribution to veterinary literature in Bulletin No. 51 of the Minnesota Station, the author being that sterling veterinarian, Dr. M. H. Reynolds. We have received Bulletin No. 81 of the Alabama Agricultural Experiment Station on "Meat Inspection," being a report by State Veterinarian C. A. Cary, and it is one of the fullest and most comprehensive documents that has ever been issued under similar circumstances. It includes a consideration of hog cholera, swine plague, tuberculosis of cattle, of pigs, and of birds, with their post-mortem appearances; staining the tubercle bacilli, histology of tuberculous lesions, actinomycosis, anthrax, Texas fever, malignant catarrh of cattle, putrefying meat, course or order of post-mortems, an extended consideration of the various parasites of domestic animals, and many other matters of interest to farmers, stock-growers and veterinarians.

INSANITY IN ANIMALS.—Insanity in the human subject is supposed by some to have no analogue in the lower animals. Yet many causes, according to Dr. Snelison, will lead to the permanent loss of self-control. Cattle driven from the country through a crowded town will often work themselves into a frenzy. Horses have gone mad on the battle-field. At Bala-klava an Arabian horse turned on its attendant as he was drawing water, seized him in his mouth, threw him down, and, kneeling on him, attacked him like an infuriated dog. He bit off another soldier's finger. An instance is related of a docile horse suddenly going mad on a hot day. Everything that came in its way it seized in its teeth and shook as a terrier does a rat. It raided the pigsties and threw the inmates one after another in the air, trampling on the bodies as they fell. Afterward it almost killed its own master, after maiming for life the farrier who was called in. This must have been a case of insanity, the cause of which is often to be found in congenital malformations of the bones of the head. A scientist of authority even goes so far as to prove by what appears to be incontestable evidence that cats, dogs, and monkeys have been observed to have delusions very similar to those of insane people.—(*Popular Science News.*)

SUCCESSFUL CART-HORSE SHOWS.—In the Regent's Park, London, on Whit-Monday, over 770 horses appeared in competition for the valuable prizes offered by the Society. All horses had to pass the preliminary examination of the veterinary inspectors, after which they were examined by four judges for grooming and cleanliness. The gentlemen who undertook this part of the proceedings were the Earl of Verulam, Lord Arthur Cecil, Lieut.-Col. Henry, and Mr. Tom Jay. Four other judges awarded the premiums and silver medals offered by the Shire Horse Society for the best horses, irrespective of breed, and two others the prizes for horses of the Suffolk breed. The show was a great success. The parade and horse show held at Providence, R. I., Monday, June 7, was modeled on lines similar to the cart-horse parade held in London. This was the first event of this kind ever held in this country, and the Providence Horse Improvement Association intends in the future to make the affair an annual one. The initial parade and exhibition was an unqualified success and reflects credit on the association. Messrs. E. B. Conant, of Lowell, Mass.; John Shepard, of Boston; Harrison K. Caner, of Philadelphia; D. Winslow Clark, of Boston; Jos. Balch, M. F. H., and Herbert Maynard, of Dedham, Mass.; A. R. Burnham and J. C. Small, of Willimantic, Conn., were the judges, the veterinary surgeons being Dr. John T. Cunningham and Dr. L. Parker. The judging of the draught horses and delivery wagons was one of the most interesting features of the show, especially the heavy-draught, eight-horse teams.

FIRST PROSECUTION UNDER THE NEW HORSE-SHOERS' LAW IN NEW YORK STATE.—Lawyer Edward J. Callahan and Charles J. McGinniss, the former counsel and the latter secretary of the National Horse-shoers' Protective Association, appeared in the Ewen Street Police Court, Brooklyn, N. Y., on July 21st, to prosecute the first case brought at the instance of the association under amendments made at the last session of the Legislature to Chapter 271 of the laws of 1896, entitled "An act to regulate the practice of horse-shoeing in cities of the State of New York having a population of 50,000 or more." The defendant was Edward Jones, a horse-shoer at McKibben Street and Graham Avenue. The prosecution charged that Mr. Jones filed an affidavit with the County Clerk of Queens County that he had been for three years, prior to the passage of the act, a practical horse-shoer, whereas the prosecution contended they could prove that Mr. Jones had not practiced the trade for two years past. Lawyer Callahan explained that the association

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could prosecute Mr. Jones for perjury, if it so desired, but it understood that the defendant was willing to plead guilty to a misdemeanor and it was willing to accept that plea, as the moral effect of the decision would be a sufficient warning to others. The new law, Mr. Callahan contended, provided that no horse-shoer should be permitted to register unless he had satisfactorily passed the examination before a board of examiners provided by the government for that purpose and consisting of one veterinary surgeon, two master and two journeymen horse-shoers. After consulting the amended statutes Justice Lemon imposed the fine of \$10 for the misdemeanor. The defendant was not represented by counsel.

LAWSUIT FOR A HEN'S BOARD BILL.—Daniel Rice, of Arverne, L. I., is being sued for a hen's board bill—\$38.50. He thinks the bill exorbitant, and refuses to pay. His refusal will bring into the District courts of New York one of the oddest specimens of fowl ever seen. This board bill, by the way, is the only bill the hen possesses, for she has a distinct human face. She has a nose with a slight Roman bend, and clearly defined nostrils. Two lips soft and pink, and regular upper and lower lips take the place of a beak, while the interior of the mouth resembles to a surprising extent that of an infant. This hen's mother was a hen of the Poland species, a hard-scratching fowl, on an Indiana poultry farm, and attended strictly to business. On one occasion she laid an egg, and then instead of waiting for others, promptly "set" on that solitary egg. A surprise was in store for that fond mother. When her infant chick first began to "peep" she realized that something was wrong. It resembled no other chick of hers, nor did it look at all like those of her neighbors. As a result the mother promptly abandoned her offspring. The human-faced chick was, moreover, ostracized. None of the other members of the barnyard would tolerate the new arrival. A year ago the hen was presented to Mr. Rice, a retired poultry dealer. As the hen required special feeding Mr. Rice gave her into the care of Dr. George Cohen, a veterinary surgeon, at Nos. 135 and 137 Division Street. Dr. Cohen was instructed to find a diet upon which the hen would thrive. The doctor began to experiment, and ascertained that the hen preferred beefsteak and mushrooms, Welsh rarebits, lobsters, paté de foi gras, pie, gruels, and in fact, most any food prized by ordinary mortals. They called the hen "Mabel Corbett," owing to the pompadour of feathers which rises for an inch or more over her eyes. She is a great favorite with the

veterinary surgeon and follows him and his men about like a dog, uttering a queer gurgle, unlike any noise ever made by other hens. She is a year and a half old and has never laid an egg. Mr. Rice a few days ago expressed a desire for the return of his peculiar pet and then Dr. Cohen presented a bill for \$38.50 for medical treatment, board and lodging for nearly five months. Mr. Rice refused to settle and the veterinary surgeon placed the hen's board bill in the hands of Lawyer Levy, of No. 13 Chambers Street, who will sue the owner for the amount. Lawyer Levy is only waiting his opportunity to serve Mr. Rice with the necessary papers.—(*New York Journal*.)

A VETERINARY PRACTICE FOR SALE.

The best chance ever offered for a good, enterprising Veterinary Surgeon, in the best Summer resort in the United States; the population is over 20,000; the surrounding country is of the very best. No other qualified Veterinary Surgeon within 20 miles. Hospital, with all modern improvements, 13 stalls, office and medicine rooms the finest in the State, and all complete. Hospital is within 300 yards of race track, of 1,000 stalls; in racing season stalls are all occupied and a number of the race-horses winter here, making it an all-the-year-round business.

My books will show that I have done over \$50,000 worth of business in six years. The very best reason for offering for sale will be given. I keep five horses in my practice. I own everything about the place. I will sell practice and lease the property, consisting of the described Hospital and a dwelling house of ten rooms, all newly furnished, and latest improved house, or I will sell the property and everything complete on very easy terms. Very little money will be needed. Any good man that would like the above described business, I would be pleased to have come and make me a visit for a week or ten days and look the prospects over and see for themselves. Address T. C. S., care *American Veterinary Review*, 141 West 54th St., New York City.

FOR SALE—A HORSE AMBULANCE.

A splendid horse AMBULANCE complete in every respect. Elegantly ornamented with brass railing, brass lamps, etc. Painting the work of an artist. Makes a finer appearance on the street than a fire engine. Equipped fully with ropes, chains, hobbles, windlass, cranks, etc. The portable bottom is on 18 rollers, which can be moved anywhere, and the completely disabled animal secured on it and drawn into the ambulance with the windlass. A horse using three legs only can walk into it. The ambulance is lined inside with steel and the whole is built to last forever.

Veterinarians from many different places say it is the finest and best they ever saw. Continued illness the only reason for selling.

Harness ornamented to match the ambulance.

Address "AMBULANCE," care of AMERICAN VETERINARY REVIEW, 141 W. 54th Street, New York City.

ASSISTANTSHIP WANTED.

By a young man (26) graduate of A. V. C. 1896. Want a place where can see plenty of Practical Work. For further information, address,

J. S. BUCKLEY, Mt. Washington, Maryland